

23/12

LAB Invoicing System  
Work Complete

Run Date: 06/26/98

Sold To: START - DALLAS  
VIA- (SEE CLIENT CONTACT)  
DALLAS OFFICE, TX 75201

Status Date: 06/26/98

Our Job Number: 9801.230

Customer Order Number: KJ6103-052601SFX

Project Manager:

Office:

| Lab             | Matrix | Test             |         | Unit Price | No. of Samples | No. of QC Samples | Total Analytical | Total Data Deliverables | Total     |
|-----------------|--------|------------------|---------|------------|----------------|-------------------|------------------|-------------------------|-----------|
| Gen. Analytical | S      | PH               | -S      | 5.00       | 2              | 0                 | \$ 10.00         | \$ .00                  | \$ 10.00  |
| Metals          | S      | METALS DIGESTION | -SOLID  | 10.00      | 2              | 0                 | 20.00            | .00                     | 20.00     |
|                 |        | TAL METALS       | -SOLID  | 50.00      | 2              | 0                 | 100.00           | .00                     | 100.00    |
|                 |        | TAL METALS 2     | (ICP)-S | 20.00      | 2              | 0                 | 40.00            | .00                     | 40.00     |
| Subtotal:       |        |                  |         |            |                |                   | \$ 160.00        | \$ .00                  | \$ 160.00 |
| GC              | S      | 8021B BETX       | -S      | 40.00      | 2              | 0                 | 80.00            | .00                     | 80.00     |
|                 |        | TPH-TNRCC        | -S      | 55.00      | 2              | 0                 | 110.00           | .00                     | 110.00    |
| Subtotal:       |        |                  |         |            |                |                   | \$ 190.00        | \$ .00                  | \$ 190.00 |
| Other           | S      | 8310 PAH/LC      | -S      | 110.00     | 2              | 0                 | 220.00           | .00                     | 220.00    |
| TOTAL           |        |                  |         |            |                |                   | \$ 580.00        | \$ .00                  | \$ 580.00 |

Test Total \$ 580.00

Other Charges:

Method Development .00

Sample Pickup/Shipping .00

GRAND TOTAL \$ 580.00

9011574



63184

LAB Invoicing System  
Work Complete

Run Date: 06/26/98

Sold To: START - DALLAS  
VIA (SEE CLIENT CONTACT)  
DALLAS OFFICE, TX 75201Status Date: 06/26/98  
Customer Order Number: KJ6103-052601SEXX  
Project Manager:  
Office:

Our Job Number: 9801.203

| Lab             | Matrix | Test             |         | Unit Price | No. of Samples | No. of QC Samples | Total Analytical | Total Data Deliverables | Total       |
|-----------------|--------|------------------|---------|------------|----------------|-------------------|------------------|-------------------------|-------------|
| Gen. Analytical | S      | PH               | -S      | 5.00       | 9              | 0                 | \$ 45.00         | \$ .00                  | \$ 45.00    |
| Metals          | S      | METALS DIGESTION | -SOLID  | 10.00      | 9              | 0                 | 90.00            | .00                     | 90.00       |
|                 |        | TAL METALS       | -SOLID  | 50.00      | 9              | 0                 | 450.00           | .00                     | 450.00      |
|                 |        | TAL METALS 2     | (ICP)-S | 20.00      | 9              | 0                 | 180.00           | .00                     | 180.00      |
| Subtotal:       |        |                  |         |            |                |                   | \$ 720.00        | \$ .00                  | \$ 720.00   |
| GC              | S      | 8021B BETX       | -S      | 40.00      | 9              | 0                 | 360.00           | .00                     | 360.00      |
|                 |        | TPH-TNRCC        | -S      | 55.00      | 9              | 0                 | 495.00           | .00                     | 495.00      |
|                 | W      | 8021B BETX       | -W      | 40.00      | 5              | 0                 | 200.00           | .00                     | 200.00      |
|                 |        | TPH-TNRCC        | -W      | 55.00      | 4              | 0                 | 220.00           | .00                     | 220.00      |
| Subtotal:       |        |                  |         |            |                |                   | \$ 1,275.00      | \$ .00                  | \$ 1,275.00 |
| Other           | S      | 8310 PAH/LC      | -S      | 110.00     | 9              | 0                 | 990.00           | .00                     | 990.00      |
| TOTAL           |        |                  |         |            |                |                   | \$ 3,030.00      | \$ .00                  | \$ 3,030.00 |

Test Total \$ 3,030.00

Other Charges:

Method Development .00

Sample Pickup/Shipping .00

GRAND TOTAL \$ 3,030.00

63154

LAB Invoicing System  
Work Complete

Run Date: 06/26/98

Sold To: START - DALLAS  
VIA (SEE CLIENT CONTACT)  
DALLAS OFFICE, TX 75201

Status Date: 06/26/98  
Customer Order Number: KJ6103-052601SEXX  
Project Manager:  
Office:

Our Job Number: 9801.181

| Lab             | Matrix | Test             |         | Unit Price | No. of Samples | No. of QC Samples | Total Analytical | Total Data Deliverables | Total       |
|-----------------|--------|------------------|---------|------------|----------------|-------------------|------------------|-------------------------|-------------|
| Gen. Analytical | S      | PH               | -S      | 5.00       | 12             | 0                 | \$ 60.00         | \$ .00                  | \$ 60.00    |
| Metals          | S      | METALS DIGESTION | -SOLID  | 10.00      | 12             | 0                 | 120.00           | .00                     | 120.00      |
|                 |        | TAL METALS       | -SOLID  | 50.00      | 12             | 0                 | 600.00           | .00                     | 600.00      |
|                 |        | TAL METALS 2     | (ICP)-S | 20.00      | 12             | 0                 | 240.00           | .00                     | 240.00      |
| Subtotal:       |        |                  |         |            |                |                   | \$ 960.00        | \$ .00                  | \$ 960.00   |
| GC              | S      | 8021B BETX       | -S      | 40.00      | 12             | 0                 | 480.00           | .00                     | 480.00      |
|                 |        | TPH-TNRCC        | -S      | 55.00      | 12             | 0                 | 660.00           | .00                     | 660.00      |
|                 | W      | 8021B BETX       | -W      | 40.00      | 2              | 0                 | 80.00            | .00                     | 80.00       |
|                 |        | TPH-TNRCC        | -W      | 55.00      | 1              | 0                 | 55.00            | .00                     | 55.00       |
| Subtotal:       |        |                  |         |            |                |                   | \$ 1,275.00      | \$ .00                  | \$ 1,275.00 |
| Other           | S      | 8310 PAH/LC      | -S      | 110.00     | 12             | 0                 | 1,320.00         | .00                     | 1,320.00    |
| TOTAL           |        |                  |         |            |                |                   | \$ 3,615.00      | \$ .00                  | \$ 3,615.00 |

Test Total \$ 3,615.00

## Other Charges:

Method Development .00

Sample Pickup/Shipping .00

GRAND TOTAL \$ 3,615.00

LAB Invoicing System  
Work Complete

Run Date: 06/23/98

Sold To: START - DALLAS

VIA (SEE CLIENT CONTACT)

DALLAS OFFICE, TX 75201

Status Date: 06/23/98

Our Job Number: 9801.165

Customer Order Number: KJ6103-052601SEXX

Project Manager:

Office:

| Lab             | Matrix | Test             |         | Unit Price | No. of Samples | No. of QC Samples | Total Analytical | Total Data Deliverables | Total       |
|-----------------|--------|------------------|---------|------------|----------------|-------------------|------------------|-------------------------|-------------|
| Gen. Analytical | S      | PH               | -S      | 5.00       | 6              | 0                 | \$ 30.00         | \$ .00                  | \$ 30.00    |
| Metals          | S      | METALS DIGESTION | -SOLID  | 10.00      | 6              | 0                 | 60.00            | .00                     | 60.00       |
|                 |        | TAL METALS       | -SOLID  | 50.00      | 6              | 0                 | 300.00           | .00                     | 300.00      |
|                 |        | TAL METALS 2     | (ICP)-S | 20.00      | 6              | 0                 | 120.00           | .00                     | 120.00      |
| Subtotal:       |        |                  |         |            |                |                   | \$ 480.00        | \$ .00                  | \$ 480.00   |
| GC              | S      | 8021B BETX       | -S      | 40.00      | 6              | 0                 | 240.00           | .00                     | 240.00      |
|                 |        | TPH-TNRCC        | -S      | 55.00      | 6              | 0                 | 330.00           | .00                     | 330.00      |
|                 | W      | 8021B BETX       | -W      | 40.00      | 1              | 0                 | 40.00            | .00                     | 40.00       |
|                 |        | TPH-TNRCC        | -W      | 55.00      | 1              | 0                 | 55.00            | .00                     | 55.00       |
| Subtotal:       |        |                  |         |            |                |                   | \$ 665.00        | \$ .00                  | \$ 665.00   |
| Other           | S      | 8310 PAH/LC      | -S      | 110.00     | 6              | 0                 | 660.00           | .00                     | 660.00      |
| TOTAL           |        |                  |         |            |                |                   | \$ 1,835.00      | \$ .00                  | \$ 1,835.00 |

Test Total \$ 1,835.00

Other Charges:

Method Development .00

Sample Pickup/Shipping .00

GRAND TOTAL \$ 1,835.00



ANALYTICAL SERVICES CENTER  
Ecology and Environment, Inc. (E & E)  
4493 Walden Avenue  
Lancaster, New York 14086  
Telephone: (716) 685-8080 Fax: (716) 685-0852

*International Specialists in the Environment*

Our pledge is to provide the highest  
quality analytical results in a timely,  
efficient, and economical manner.

### TELECOPIER TRANSMISSION FORM

|  |  |
|--|--|
| DATE: 6/19   | TIME:  |
| PROJECT NUMBER:  | TOTAL NUMBER OF PAGES<br>(Including Transmission Form): 3  |
| TO: Tom Beer   |  |
| COMPANY:   |  |
| TELECOPIER:  |  |
| FROM: Caryn  |  |
| SPECIAL INSTRUCTIONS:<br>oops - missed faxing these 2 pages  |  |
| FULL SERVICE CAPABILITY:<br>Atomic Absorption Analysis<br>Inductively Coupled Plasma Analysis<br>Gas Chromatography<br>Gas Chromatography/Mass Spectrometry<br>High Performance Liquid Chromatography<br>Ion Chromatography, Fourier Transform Infra-red<br>Ultraviolet/Visible Spectroscopy<br>Air (Canisters, Bags, Tenax, Charcoal) | Chlorophenols, AOX<br>Immunoassay<br>Nitroaromatics (Explosives), Chemical Agents<br>NPDES/SPDES<br>Soil Gas Screening (Field or Laboratory)<br>TCLP<br>TPH-BETX |



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### TELECOPIER TRANSMISSION FORM

|  |  |
|--|--|
| DATE: 6/19/98  | TIME:  |
| PROJECT NUMBER:<br>WILCOX REFINERY   | TOTAL NUMBER OF PAGES<br>(Including Transmission Form): 24   |
| TO: Tom BEER / DAVID ANDERSON  |  |
| COMPANY: Dallas START  |  |
| TELECOPIER:  |  |
| FROM: Caryn Wojtowicz -  |  |
| SPECIAL INSTRUCTIONS:<br>Metals and PAH results 9801.203 follow<br><br>All results for last 2 samples (9801.230)<br><br>This concludes "verbals" on this project   |  |
| FULL SERVICE CAPABILITY:<br>Atomic Absorption Analysis<br>Inductively Coupled Plasma Analysis<br>Gas Chromatography<br>Gas Chromatography/Mass Spectrometry<br>High Performance Liquid Chromatography<br>Ion Chromatography, Fourier Transform Infra-red<br>Ultraviolet/Visible Spectroscopy<br>Air (Canisters, Bags, Tenax, Charcoal) | Chlorophenols, AOX<br>Immunoassay<br>Nitroaromatics (Explosives), Chemical Agents<br>NPDES/SPDES<br>Soil Gas Screening (Field or Laboratory)<br>TCLP<br>TPH-BETX |



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### TELECOPIER TRANSMISSION FORM

|  |  |
|--|--|
| DATE: 6/18/98  | TIME:  |
| PROJECT NUMBER: Wilcox Refinery  | TOTAL NUMBER OF PAGES<br>(Including Transmission Form): 13   |
| TO: Tom Beer / David Anderson  |  |
| COMPANY: Dallas Office   |  |
| TELECOPIER:  |  |
| FROM: Caryn Wojtowicz  |  |
| SPECIAL INSTRUCTIONS:<br><br>I will fax PAH and metals data for this group tomorrow with the last batch.<br><br>We ran into some problems with metals instrumentation and analysis will not be completed until later tonight.  |  |
| FULL SERVICE CAPABILITY:<br>Atomic Absorption Analysis<br>Inductively Coupled Plasma Analysis<br>Gas Chromatography<br>Gas Chromatography/Mass Spectrometry<br>High Performance Liquid Chromatography<br>Ion Chromatography, Fourier Transform Infra-red<br>Ultraviolet/Visible Spectroscopy<br>Air (Canisters, Bags, Tenax, Charcoal) | Chlorophenols, AOX<br>Immunoassay<br>Nitroaromatics (Explosives), Chemical Agents<br>NPDES/SPDES<br>Soil Gas Screening (Field or Laboratory)<br>TCLP<br>TPH-BETX |



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efficient, and economical manner.

*International Specialists in the Environment*

### TELECOPIER TRANSMISSION FORM

|  |  |
|--|--|
| DATE: 6/17/98  | TIME:  |
| PROJECT NUMBER:  | TOTAL NUMBER OF PAGES (Including Transmission Form): 38  |
| TO: Tom Beer / David Anderson  |  |
| COMPANY: Dallas Office   |  |
| TELECOPIER:  |  |
| FROM: Caryn Wojtowicz  |  |
| SPECIAL INSTRUCTIONS:<br>Here is the next batch of Wilcox Refinery data.<br><br>We did have a HPLC problem last <sup>12</sup> night which will result in <del>tomorrow</del> PAH data due tomorrow being one day late. I will fax the BETX, metals, pH, TRNCC on time.<br>14 12 12 12 11   |  |
| 2  |  |
| FULL SERVICE CAPABILITY:<br>Atomic Absorption Analysis<br>Inductively Coupled Plasma Analysis<br>Gas Chromatography<br>Gas Chromatography/Mass Spectrometry<br>High Performance Liquid Chromatography<br>Ion Chromatography, Fourier Transform Infra-red<br>Ultraviolet/Visible Spectroscopy<br>Air (Canisters, Bags, Tenax, Charcoal) | Chlorophenols, AOX<br>Immunoassay<br>Nitroaromatics (Explosives), Chemical Agents<br>NPDES/SPDES<br>Soil Gas Screening (Field or Laboratory)<br>TCLP<br>TPH-BETX |



David,

154

# WILCOX REFINERY

SAMPLE REPORT FOR PERIOD 6/1/98 to 6/4/98

| <u>Matrix</u>    | <u>(8021B)<br/>BTEX</u> | <u>(TNMCL 1005)<br/>TPH</u> | <u>(8310)<br/>PAH</u>   | <u>(ICP)<br/>Metals</u> | <u>pH</u>               | <u>Duplicates</u> | <u>TB</u>          |
|------------------|-------------------------|-----------------------------|-------------------------|-------------------------|-------------------------|-------------------|--------------------|
| Soil (26)        | <sup>(23)</sup><br>26 ✓ | <sup>(23)</sup><br>26 ✓     | <sup>(23)</sup><br>26 ✓ | <sup>(23)</sup><br>26 ✓ | <sup>(23)</sup><br>26 ✓ | 3                 |                    |
| Ground Water (5) | <sup>(7)</sup><br>5 ✓   | 5 ✓                         | -                       | -                       | -                       | 1 ✓               | 2 ✓<br>(BTEX only) |

Tom Beer

21  
2/8

ECOLOGY AND ENVIRONMENT, INC.  
ANALYTICAL SERVICES CENTER  
SAMPLE RECEIPT ACKNOWLEDGEMENT

ASC JOB #: 9801.165  
PACKAGE RECEIPT #: 844  
DATE RECEIVED: 06/02/98  
DATE LOGGED: 06/02/98  
PROJECT MANAGER:  
OFFICE:  
CLIENT NUMBER: 2824  
CONTACT: MR. TOM BEER  
COMPANY: START - DALLAS  
ADDRESS: VIA (SEE CLIENT CONTACT)  
: DALLAS OFFICE, TX 75201  
P. O. #: KJ6103 052601SEFX  
PROJECT #: KJ6103  
VERBAL ORDER BY:  
COMMENT: VERBALS DUE 6/16, HARDCOPY OUT 6/22

SAMPLE SUMMARY

| CLIENT SAMPLE ID | SAMPLE<br>DATE | ASC<br>SAMPLE NUMBER |
|------------------|----------------|----------------------|
| SB02-12          | 06/01/98       | 7830                 |
| SB03-1.52        | 06/01/98       | 7831                 |
| SB04-0405        | 06/01/98       | 7832                 |
| SB05-0102        | 06/01/98       | 7833                 |
| SB05-0405        | 06/01/98       | 7834                 |
| SB05-1415        | 06/01/98       | 7835                 |
| SB05-GW1         | 06/01/98       | 7836                 |

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LAB Invoicing System  
Initial Order

Run Date: 06/06/98

Sold To: START - DALLAS  
VIA (SEE CLIENT CONTACT)  
DALLAS OFFICE, TX 75201

Status Date: 06/06/98  
Customer Order Number: KJ6103-052601SEXX  
Project Manager:  
Office:

Our Job Number: 9801.165

| Lab             | Matrix | Test             |         | Unit Price | No. of Samples | No. of QC Samples | Total Analytical | Total Data Deliverables | Total       |
|-----------------|--------|------------------|---------|------------|----------------|-------------------|------------------|-------------------------|-------------|
| Gen. Analytical | S      | PH               | -S      | 5.00       | 6              | 0                 | \$ 30.00         | \$ .00                  | \$ 30.00    |
| Metals          | S      | METALS DIGESTION | -SOLID  | 10.00      | 6              | 0                 | 60.00            | .00                     | 60.00       |
|                 |        | TAL METALS       | -SOLID  | 50.00      | 6              | 0                 | 300.00           | .00                     | 300.00      |
|                 |        | TAL METALS 2     | (ICP)-S | 20.00      | 6              | 0                 | 120.00           | .00                     | 120.00      |
| Subtotal:       |        |                  |         |            |                |                   | \$ 480.00        | \$ .00                  | \$ 480.00   |
| GC              | S      | 8021B BETX       | -S      | 40.00      | 6              | 0                 | 240.00           | .00                     | 240.00      |
|                 |        | TPH-TNRCC        | -S      | 55.00      | 6              | 0                 | 330.00           | .00                     | 330.00      |
|                 | W      | 8021B BETX       | -W      | 40.00      | 1              | 0                 | 40.00            | .00                     | 40.00       |
|                 |        | TPH-TNRCC        | -W      | 55.00      | 1              | 0                 | 55.00            | .00                     | 55.00       |
| Subtotal:       |        |                  |         |            |                |                   | \$ 665.00        | \$ .00                  | \$ 665.00   |
| Other           | S      | 8310 PAH/LC      | -S      | 110.00     | 6              | 0                 | 660.00           | .00                     | 660.00      |
| TOTAL           |        |                  |         |            |                |                   | \$ 1,835.00      | \$ .00                  | \$ 1,835.00 |

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Test Total \$ 1,835.00  
Other Charges:  
Method Development .00  
Sample Pickup/Shipping .00  
GRAND TOTAL \$ 1,835.00

ECOLOGY AND ENVIRONMENT, INC.  
ANALYTICAL SERVICES CENTER  
SAMPLE RECEIPT ACKNOWLEDGEMENT

ASC JOB #: 9801.181  
PACKAGE RECEIPT #: 856  
DATE RECEIVED: 06/03/98  
DATE LOGGED: 06/03/98  
PROJECT MANAGER:  
OFFICE:  
CLIENT NUMBER: 2824  
CONTACT: MR. TOM BEER  
COMPANY: START - DALLAS  
ADDRESS: VIA (SEE CLIENT CONTACT)  
: DALLAS OFFICE, TX 75201  
P. O. #: KJ6103.052601SEFX  
PROJECT #: KJ6103  
VERBAL ORDER BY:  
COMMENT: VERBALS DUE 6/17/98

SAMPLE SUMMARY

| CLIENT SAMPLE ID | SAMPLE<br>DATE | ASC<br>SAMPLE NUMBER |
|------------------|----------------|----------------------|
| SB06-0102        | 06/02/98       | 7928                 |
| SB07-0405        | 06/02/98       | 7929                 |
| SB07D-0405       | 06/02/98       | 7930                 |
| SB08-0102        | 06/02/98       | 7931                 |
| SB09-0102        | 06/02/98       | 7932                 |
| SB10-0304        | 06/02/98       | 7933                 |
| SB11-0203        | 06/02/98       | 7934                 |
| SB12-0102        | 06/02/98       | 7935                 |
| SB12-0809        | 06/02/98       | 7936                 |
| SB13-0102        | 06/02/98       | 7937                 |
| SB13-6575        | 06/02/98       | 7938                 |
| SB13D-6575       | 06/02/98       | 7939                 |
| SB13-GW-2        | 06/02/98       | 7940                 |
| IB               | 06/02/98       | 7941                 |

Rec 6/24

LAB Invoicing System  
Initial Order

Run Date: 06/11/98

Sold To: START - DALLAS

VIA (SEE CLIENT CONTACT)

DALLAS OFFICE, TX 75201

Status Date: 06/11/98

Our Job Number: 9801.181

Customer Order Number: KJ6103-052601SEXX

Project Manager:

Office:

| Lab             | Matrix | Test                 | Unit Price   | No. of Samples | No. of QC Samples | Total Analytical | Total Data Deliverables | Total       |
|-----------------|--------|----------------------|--------------|----------------|-------------------|------------------|-------------------------|-------------|
| Gen. Analytical | S      | PH                   | -S 5.00      | 12 ✓           | 0                 | \$ 60.00         | \$ .00                  | \$ 60.00    |
| Metals          | S      | METALS DIGESTION     | -SOLID 10.00 | 12 ✓           | 0                 | 120.00           | .00                     | 120.00      |
|                 |        | TAL METALS           | -SOLID 50.00 | 12 ✓           | 0                 | 600.00           | .00                     | 600.00      |
|                 |        | TAL METALS 2 (ICP)-S | 20.00        | 12 ✓           | 0                 | 240.00           | .00                     | 240.00      |
| Subtotal:       |        |                      |              |                |                   | \$ 960.00        | \$ .00                  | \$ 960.00   |
| GC              | S      | 8021B BETX           | -S 40.00     | 12 ✓           | 0                 | 480.00           | .00                     | 480.00      |
|                 |        | TPH-TNRCC            | -S 55.00     | 12 ✓           | 0                 | 660.00           | .00                     | 660.00      |
|                 | W      | 8021B BETX           | -W 40.00     | 2 ✓            | 0                 | 80.00            | .00                     | 80.00       |
|                 |        | TPH-TNRCC            | -W 55.00     | 1 ✓            | 0                 | 55.00            | .00                     | 55.00       |
| Subtotal:       |        |                      |              |                |                   | \$ 1,275.00      | \$ .00                  | \$ 1,275.00 |
| Other           | S      | 8310 PAH/LC          | -S 110.00    | 12 ✓           | 0                 | 1,320.00         | .00                     | 1,320.00    |
| TOTAL           |        |                      |              |                |                   | \$ 3,615.00      | \$ .00                  | \$ 3,615.00 |

Test Total \$ 3,615.00

Other Charges:

Method Development .00

Sample Pickup/Shipping .00

GRAND TOTAL \$ 3,615.00

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ECOLOGY AND ENVIRONMENT, INC.  
ANALYTICAL SERVICES CENTER  
SAMPLE RECEIPT ACKNOWLEDGEMENT

ASC JOB #: 9801.203  
PACKAGE RECEIPT #: 873  
DATE RECEIVED: 06/04/98  
DATE LOGGED: 06/04/98  
PROJECT MANAGER:  
OFFICE:  
CLIENT NUMBER: 2824  
CONTACT: MR. TOM BEER  
COMPANY: START - DALLAS  
ADDRESS: VIA (SEE CLIENT CONTACT)  
: DALLAS OFFICE, TX 75201  
P. O. #: KJ6103.052601SEXX  
PROJECT #: KJ6103  
VERBAL ORDER BY:  
COMMENT: VERBALS DUE 6/18/98

SAMPLE SUMMARY

| CLIENT SAMPLE ID | SAMPLE<br>DATE | ASC<br>SAMPLE NUMBER |
|------------------|----------------|----------------------|
| SB14 0102        | 06/03/98       | 8034                 |
| SB14 0506        | 06/03/98       | 8035                 |
| SB15 0001        | 06/03/98       | 8036                 |
| SB16 -           | 06/03/98       | 8037                 |
| SB17 0102        | 06/03/98       | 8038                 |
| SB17D 0102       | 06/03/98       | 8039                 |
| SB17 5565        | 06/03/98       | 8040                 |
| SB18 0102        | 06/03/98       | 8041                 |
| SB18 0708        | 06/03/98       | 8042                 |
| SB15 GW3         | 06/03/98       | 8043                 |
| SB15D GW3        | 06/03/98       | 8044                 |
| SB17 GW4         | 06/03/98       | 8045                 |
| TB               | 06/03/98       | 8046                 |
| SB18 GW5         | 06/03/98       | 8047                 |

LAB Invoicing System  
Initial Order

Run Date: 06/11/98

Sold To: START - DALLAS  
VIA (SEE CLIENT CONTACT)  
DALLAS OFFICE, TX 75201

Status Date: 06/11/98

Our Job Number: 9801.203

Customer Order Number: KJ6103-052601SEXX

Project Manager:

Office:

| Lab             | Matrix | Test             |         | Unit Price | No. of Samples | No. of QC Samples | Total Analytical | Total Data Deliverables | Total       |
|-----------------|--------|------------------|---------|------------|----------------|-------------------|------------------|-------------------------|-------------|
| Gen. Analytical | S      | PH               | -S      | 5.00       | 9              | 2 0 6/11          | \$ 45.00         | \$ .00                  | \$ 45.00    |
| Metals          | S      | METALS DIGESTION | -SOLID  | 10.00      | 9              | 0 6/11            | 90.00            | .00                     | 90.00       |
|                 |        | TAL METALS       | -SOLID  | 50.00      | 9              | 0 6/11            | 450.00           | .00                     | 450.00      |
|                 |        | TAL METALS 2     | (ICP)-S | 20.00      | 9              | 0                 | 180.00           | .00                     | 180.00      |
| Subtotal:       |        |                  |         |            |                |                   | \$ 720.00        | \$ .00                  | \$ 720.00   |
| GC              | S      | 8021B BETX       | -S      | 40.00      | 9              | 0 6/11            | 360.00           | .00                     | 360.00      |
|                 |        | TPH-TNRCC        | -S      | 55.00      | 9              | 0 6/11            | 495.00           | .00                     | 495.00      |
|                 | W      | 8021B BETX       | -W      | 40.00      | 5              | 0 6/11            | 200.00           | .00                     | 200.00      |
|                 |        | TPH-TNRCC        | -W      | 55.00      | 4              | 0 6/11            | 220.00           | .00                     | 220.00      |
| Subtotal:       |        |                  |         |            |                |                   | \$ 1,275.00      | \$ .00                  | \$ 1,275.00 |
| Other           | S      | 8310 PAH/LC      | -S      | 110.00     | 9              | 0 6/11            | 990.00           | .00                     | 990.00      |
| TOTAL           |        |                  |         |            |                |                   | \$ 3,030.00      | \$ .00                  | \$ 3,030.00 |

Test Total \$ 3,030.00

Other Charges:

Method Development .00

Sample Pickup/Shipping .00

GRAND TOTAL \$ 3,030.00

ECOLOGY AND ENVIRONMENT, INC.  
ANALYTICAL SERVICES CENTER  
SAMPLE RECEIPT ACKNOWLEDGEMENT

ASC JOB #: 9801.230  
PACKAGE RECEIPT #: 892  
DATE RECEIVED: 06/05/98  
DATE LOGGED: 06/05/98  
PROJECT MANAGER:  
OFFICE:  
CLIENT NUMBER: 2824  
CONTACT:  
COMPANY: START - DALLAS  
ADDRESS: VIA (SEE CLIENT CONTACT)  
: DALLAS OFFICE, TX 75201-  
P. O. #: KJ6103,052601SEXX  
PROJECT #: KJ6103  
VERBAL ORDER BY: MR TOM BEER  
COMMENT: VERBALS 6/19/98

SAMPLE SUMMARY

| CLIENT SAMPLE ID | SAMPLE<br>DATE | ASC<br>SAMPLE NUMBER |
|------------------|----------------|----------------------|
| SB19-0102        | 06/04/98       | 8236                 |
| SB19-0708        | 06/04/98       | 8237                 |



LAB Invoicing System  
Initial Order

Run Date: 06/11/98

Sold To: START - DALLAS  
VIA (SEE CLIENT CONTACT)  
DALLAS OFFICE, TX 75201

Status Date: 06/11/98

Our Job Number: 9801.230

Customer Order Number: KJ6103-052601SEXX

Project Manager:

Office:

| Lab             | Matrix | Test             |         | Unit Price | No. of Samples | No. of QC Samples | Total Analytical | Total Data Deliverables | Total     |
|-----------------|--------|------------------|---------|------------|----------------|-------------------|------------------|-------------------------|-----------|
| Gen. Analytical | S      | PH               | -S      | 5.00       | 2              | 0 <i>6/11</i>     | \$ 10.00         | \$ .00                  | \$ 10.00  |
| Metals          | S      | METALS DIGESTION | -SOLID  | 10.00      | 2              | 0                 | 20.00            | .00                     | 20.00     |
|                 |        | TAL METALS       | -SOLID  | 50.00      | 2              | 0                 | 100.00           | .00                     | 100.00    |
|                 |        | TAL METALS 2     | (ICP)-S | 20.00      | 2              | 0 <i>1+2</i>      | 40.00            | .00                     | 40.00     |
| Subtotal:       |        |                  |         |            |                |                   | \$ 160.00        | \$ .00                  | \$ 160.00 |
| GC              | S      | 8021B BETX       | -S      | 40.00      | 2              | 0 <i>4K</i>       | 80.00            | .00                     | 80.00     |
|                 |        | TPH-TNRCC        | -S      | 55.00      | 2              | 0 <i>4/11</i>     | 110.00           | .00                     | 110.00    |
| Subtotal:       |        |                  |         |            |                |                   | \$ 190.00        | \$ .00                  | \$ 190.00 |
| Other           | S      | 8310 PAH/LC      | -S      | 110.00     | 2              | 0 <i>4/11</i>     | 220.00           | .00                     | 220.00    |
| TOTAL           |        |                  |         |            |                |                   | \$ 580.00        | \$ .00                  | \$ 580.00 |

Test Total \$ 580.00

Other Charges:

Method Development .00

Sample Pickup/Shipping .00

GRAND TOTAL \$ 580.00

LAB Invoicing System  
Work Complete

Run Date: 05/20/98

Sold To: START - DALLAS  
VIA (SEE CLIENT CONTACT)  
DALLAS OFFICE, TX 75201

Status Date: 05/20/98  
Customer Order Number: KJ6103-052601SFG1-56  
Project Manager:  
Office:

Our Job Number: 9800.854

| Lab             | Matrix | Test             |         | Unit Price | No. of Samples | No. of QC Samples | Total Analytical | Total Data Deliverables | Total       |
|-----------------|--------|------------------|---------|------------|----------------|-------------------|------------------|-------------------------|-------------|
| Gen. Analytical | S      | PH               | -S      | 5.00       | 4              | 0                 | \$ 20.00         | \$ .00                  | \$ 20.00    |
| Metals          | S      | METALS DIGESTION | -SOLID  | 10.00      | 4              | 0                 | 40.00            | .00                     | 40.00       |
|                 |        | TAL METALS       | -SOLID  | 50.00      | 4              | 0                 | 200.00           | .00                     | 200.00      |
|                 |        | TAL METALS 2     | (ICP)-S | 20.00      | 4              | 0                 | 80.00            | .00                     | 80.00       |
| Subtotal:       |        |                  |         |            |                |                   | \$ 320.00        | \$ .00                  | \$ 320.00   |
| GC              | S      | 8021B BETX       | -S      | 40.00      | 4              | 0                 | 160.00           | .00                     | 160.00      |
|                 |        | TPH-TNRCC        | -S      | 55.00      | 4              | 0                 | 220.00           | .00                     | 220.00      |
| Subtotal:       |        |                  |         |            |                |                   | \$ 380.00        | \$ .00                  | \$ 380.00   |
| Other           | S      | 8310 PAH/LC      | -S      | 110.00     | 4              | 0                 | 440.00           | .00                     | 440.00      |
| TOTAL           |        |                  |         |            |                |                   | \$ 1,160.00      | \$ .00                  | \$ 1,160.00 |

Test Total \$ 1,160.00  
Other Charges:  
Method Development .00  
Sample Pickup/Shipping .00  
GRAND TOTAL \$ 1,160.00

ECOLOGY AND ENVIRONMENT, INC.  
ANALYTICAL SERVICES CENTER  
SAMPLE RECEIPT ACKNOWLEDGEMENT

628754  
wilcox

ASC JOB #: 9800.854  
PACKAGE RECEIPT #: 595  
DATE RECEIVED: 04/29/98  
DATE LOGGED: 04/29/98  
PROJECT MANAGER:  
OFFICE:  
CLIENT NUMBER: 2824  
CONTACT:  
COMPANY: START - DALLAS  
ADDRESS: VIA (SEE CLIENT CONTACT)  
: DALLAS OFFICE, TX 75201  
P. O. #: KJ6103.052601SFG1-56  
PROJECT #: KJ6103  
VERBAL ORDER BY:  
COMMENT:

SAMPLE SUMMARY

| CLIENT SAMPLE ID | SAMPLE<br>DATE | ASC<br>SAMPLE NUMBER |
|------------------|----------------|----------------------|
| SB106            | 04/27/98       | 5713                 |
| SB011011         | 04/27/98       | 5714                 |
| SED12            | 04/28/98       | 5715                 |
| SED11            | 04/29/98       | 5716                 |

Re  
5/19

LAB Invoicing System  
Initial Order

Run Date: 05/06/98

Sold To: START - DALLAS  
VIA (SEE CLIENT CONTACT)  
DALLAS OFFICE, TX 75201

Status Date: 05/06/98

Our Job Number: 9800.854

Customer Order Number: KJ6103-052601SFG1-56

Project Manager:

Office:

| Lab             | Matrix | Test             |         | Unit Price | No. of Samples | No. of QC Samples | Total Analytical | Total Data Deliverables | Total       |
|-----------------|--------|------------------|---------|------------|----------------|-------------------|------------------|-------------------------|-------------|
| Gen. Analytical | S      | PH               | -S      | 5.00       | 4              | 0                 | \$ 20.00         | \$ .00                  | \$ 20.00    |
| Metals          | S      | METALS DIGESTION | -SOLID  | 10.00      | 4              | 0                 | 40.00            | .00                     | 40.00       |
|                 |        | TAL METALS       | -SOLID  | 50.00      | 4              | 0                 | 200.00           | .00                     | 200.00      |
|                 |        | TAL METALS 2     | (ICP)-S | 20.00      | 4              | 0                 | 80.00            | .00                     | 80.00       |
| Subtotal:       |        |                  |         |            |                |                   | \$ 320.00        | \$ .00                  | \$ 320.00   |
| GC              | S      | 8021B BETX       | -S      | 40.00      | 4              | 0                 | 160.00           | .00                     | 160.00      |
|                 |        | TPH-TNRCC        | -S      | 55.00      | 4              | 0                 | 220.00           | .00                     | 220.00      |
| Subtotal:       |        |                  |         |            |                |                   | \$ 380.00        | \$ .00                  | \$ 380.00   |
| Other           | S      | 8310 PAH/LC      | -S      | 110.00     | 4              | 0                 | 440.00           | .00                     | 440.00      |
| TOTAL           |        |                  |         |            |                |                   | \$ 1,160.00      | \$ .00                  | \$ 1,160.00 |

Test Total \$ 1,160.00  
Other Charges:  
Method Development .00  
Sample Pickup/Shipping .00  
GRAND TOTAL \$ 1,160.00

REGION 6 START TASK ORDER #:\_S6018\_\_\_\_\_

ECOLOGY AND ENVIRONMENT, INC.  
CORPORATE SERVICES REQUEST FORM  
REGION 6 START PROGRAM

To: Caryn Wojtowicz

CC: Tom Beer, PM

CC: David Anderson

From: Al Tinker *A.T.*

Date: April 28, 1998

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ASSISTANCE REQUIRED - Analytical services for the Wilcox Refinery Site, bid/case# 6S154

| <u>Item</u> | <u>Description</u>  | <u>Quantity</u> | <u>Unit Price</u> | <u>Amount</u> |
|-------------|---|-----------------|-------------------|---------------|
| 1           | -Analysis for BTEX in soil by 8021                        | 42              | \$ 40.00          | \$1,680       |
| 2           | -Analysis for PAH in soil by 8310                         | 42              | 110.00            | 4,620         |
| 3           | -Analysis for TAL metals in soil by 6010/7471 and E&E SOW | 42              | 80.00             | 3,360         |
| 4           | -Analysis for TPH in soil by TNRCC method 1005            | 42              | 55.00             | 2,310         |
| 5           | -Analysis for pH in soil by 9045C                         | 42              | 5.00              | 210           |
| 6           | -Analysis for BTEX in water by 8021                       | 30              | 40.00             | 1,200         |
| 7           | -Analysis for TPH in water by TNRCC methode 1005          | 24              | 55.00             | 1,320         |
| Total       |   |                 |                   | 14,700        |

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DELIVERABLES/DEADLINES: A full CLP like electronic hardcopy data package (14 day FAX, 21 day hardcopy) is required. The laboratory is also responsible for proper sample disposal in accordance with all relevant laws and regulations. Any applicable E & E terms and conditions apply.

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DISCIPLINES REQUIRED: As required

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START PROGRAM ACCOUNT NUMBERS: KJ6103 052601SFG1-56

Invoice should also reference TDD number found in bottom right-hand corner.

---

REQUESTOR: David Anderson

TDD NO.: S06-9803-0009

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**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**REGION 6**

**1445 ROSS AVENUE, SUITE 1200  
DALLAS, TX 75202-2733**

**April 24, 1998**

Mr. Al Tinker  
Ecology and Environment, Inc.  
1999 Bryan Street, Suite 2000  
Dallas, TX 75201

**RE: Contract No.: 68-W6-0013, Request for Subcontract Consent  
for Wilcox Refinery Site in Bristow, Creek County, OK under  
TDD 9803-0009**

Dear Mr. Tinker:

In response to your letter dated April 22, 1998 requesting subcontract consent for the above referenced site, this letter provides consent to subcontract with the following firm:


Ecology & Environment, Inc. Analytical Services Center  
4493 Walden Avenue  
Lancaster, NY 14086

for analytical services in the total amount Not To Exceed \$14,700.00 for the Wilcox Refinery Site in Bristow, Creek County, OK. Consent is provided from the date of this letter through the completion of this TDD.

This consent shall in no way relieve the prime contractor of any obligations or responsibilities it may otherwise have under the contract or under law. This consent does not constitute an increase in the prime contract value, or the total pool value of the Subcontracting pool or the Analytical Services pool set forth in the prime contract. This consent creates neither any government obligation to nor privity of contract with your subcontractor, and shall be without prejudice to any right or claim of the government under the prime contract. This consent does not constitute a determination as to the acceptability of the subcontract price or the allowability of costs.

If you have any questions, please contact me at 665-6512.

Sincerely,

  
Tobin Osterberg  
Contracting Officer

cc: Chris Quina, START Program Manager  
Hank Thompson, Region 6 Project Officer  
Don Smith, Region 6 Task Monitor

**-Draft****Technical Direction Document  
Amendment**

06-98-03-0009-A

**START CONTRACT #: 68-W6-0013**

|   |  |                                    |
|---|--|------------------------------------|
| <b>Activity Type:</b> IV.B.4 Oil Spill Response |  | <b>Last Updated:</b> 04/27/98      |
| <b>Task:</b> medium                             |  | <b>Original Created:</b> 03/05/98  |
| <b>General Task Description:</b>                |  | <b>DPO/PO:</b> Thompson            |
|   |  | <b>Task Monitor:</b> Smith D.      |
|   |  | (214/665-6489)                     |
|   |  | <b>Task Codes:</b> RO; RV          |
| <b>Site/Project Name:</b> Wilcox Refinery       |  | <b>Estimated Cost:</b> \$45,841.00 |
| <b>Street Address:</b>                          |  | <b>Estimated Hrs:</b> 512          |
| <b>County Name:</b> Creek                       |  | <b>Dedicated:</b> 512              |
| <b>City, State, Zip:</b> Barstow, OK            |  | <b>Non-Dedicated:</b> 0            |
| <b>SSID #:</b>                                  |  | <b>Completion Date:</b> 08/12/98   |
| <b>CERCLIS #:</b> Cost Org:                     |  |                                    |
| <b>Source of Funds:</b> OPA Site Specific       |  | <b>Deliverable:</b> Formal Report  |
| <b>DCN(s):</b> LSR038 * OPA Site Specific       |  | <b>Overtime Approved:</b> Yes      |
| <b>DCN(s):</b>                                  |  | <b>Reference:</b> No               |
| LSR038 (AUZ) OPA Site Specific \$45,841.00      |  | <b>Within Annual Workplan?:</b> No |
| <b>TDD Expenditure Limit:</b> \$74,841.00       |  | <b>Staffing:</b> Dedicated Staff   |
| <b>Hours:</b> 1,012                             |  | <b>Priority:</b> High              |
| <b>Dedicated:</b> 1012                          |  | <b>Start Date:</b> 03/05/98        |
| <b>Non-Dedicated:</b> 0                         |  | <b>Verbal Date:</b>                |

**Specific Element(s):** Collect Multimedia Sampling, Conduct Oil Spill Response, Coordinate with Federal, State, & Local Officials, Document Area & Extent of Spill Impact, Identify & Document Cause/Probable Cause, Maintain Site Log Book, Prepare Maps & Sketches, Prepare Quality Assurance Sampling Plan, Prepare Waste Assessment (HAZCAT), Procure Laboratory Services, Provide Print Photo Documentation, Review Validation of Analytical Laboratory Results, Refer to Statement of Work-08/02/94, IAW Y3 AWP (medium)

**Enter Comments:** This amendment (a) adds LOE and cost to provide for continued on-site activity; (b) extends the completion date to accommodate such activity, (c) funds analytical laboratory services (estimated cost \$14,700); and (d) provides funding for program support activities such as monthly reporting, equipment, and on-call emergency response support.

**Original Comments:** 1. FPN 088079. 2. Conduct site assessment for potential removal action under the NPL for Oil Pollution Act of 1990. 3. Determine threat to waters.

**Include Standard Language in Amendment?** Yes

**Standard Language:** Coordinate with Task Monitor

**A. TDD Created By:** - Signed by William Jernigan/R6/USEPA/US on 04/27/98 08:49:21, according to /R6/US

William Jernigan

04/27/98

Signed On:

**B. Reviewed and Approved By:** (Sign to activate TDD.) - Signed by William Jernigan/R6/USEPA/US on 04/2

CONTRACTING  
Project Officer:

*William Jernigan*

Signed On:

4-28-98



ecology and environment, inc.  
**PURCHASE REQUISITION**

|   |   |
|---|---|
| Vendor: <u>Ecology &amp; Environment</u><br>Address: <u>Analytical Service Center</u><br><u>4493 Walden Ave</u><br><u>Lancaster, NY 14086</u><br>Contact: <u>Caryn Wowtowicz</u> Phone: <u>716-685-8080</u> | Date: <u>4/22/98</u> PR No.: <u>561-9105</u><br>Ship Via: _____ Date Required: <u>4/28/98</u><br>LIN: _____ PO No.: _____<br>Contract No.: <u>68-W6-0013</u> Account: _____<br>Project Number/PAN: <u>KJ6103/052601SFG1</u> |
| Ship to: <u>Same as billing</u><br>_____<br>_____<br>Attention: <u>David Anderson</u>   | Billing Address: <u>Ecology and Environment, Inc.</u><br><u>1999 Bryan Street, Suite 2000</u><br><u>Dallas, Texas 75201</u><br>Attention: _____   |

| Item | Description                              | Quantity | Unit Price | Amount    |
|------|--|----------|------------|-----------|
| 1    | BTEX in soil by 8021                     | 42       | 40.00      | 1680.00   |
| 2    | PAH in soil by 8310                      | 42       | 110.00     | 4620.00   |
| 3    | TAL metals in soil by 6010B/7471 E&E SOW | 42       | 80.00      | 3360.00   |
| 4    | TPH in soil by TNREE 1005                | 42       | 55.00      | 2310.00   |
| 5    | pH in soil by 9045C                      | 42       | 5.00       | 210.00    |
| 6    | BTEX in water by 8021                    | 30       | 40.00      | 1200.00   |
| 7    | TPH in water by TNRCC 1005               | 24       | 55.00      | 1320.00   |
| 8    | Full CLP like data deliverable           |          |            | NC        |
| 9    | 14 day FAX, 21 day Hardcopy Turnaround   |          |            | NC        |
|      |  |          |            |           |
|      | TOTAL                                    |          |            | 14,700.00 |

Purpose/Justification (continue on back if necessary) Analysis of samples to be collected at the Wilcox Refinery site, located in Bristow, OK, TDD 06-98-03-0009.

**ALTERNATE SOURCES**

| Item | Vendor             | Comment                             | Amount    |
|------|--------------------|-------------------------------------|-----------|
| 1-9  | Core Labs - GSA    | higher cost                         | 18,690.00 |
| 1-9  | Specialized Assays | higher cost                         | 16,134.50 |
| 1-9  | Quanterra          | higher cost, cannot meet turnaround | 48,478.80 |
|      |                    |                                     |           |
|      |                    |                                     |           |

Printed Name of Requestor: David Anderson

Signature of Requestor: David Anderson

Approved by/Date:

1. Alan Pinker 4/28/98 3. \_\_\_\_\_  
2. \_\_\_\_\_ 4. \_\_\_\_\_

## Wilcox Refinery Sampling Summary

| Date    | No. of Samples | Matrix   | Analysis                               |
|---------|----------------|----------|--|
| 4/27/98 | 2              | Soil     | ICP Metals, PAHs, TPH (1005), pH, BTEX |
| 4/28/98 | 2              | Sediment | " , " , " , " , BTEX                   |

START REGION 6  
SUBCONTRACT JUSTIFICATION AND CONSENT PACKAGE  
FOR  
ANALYTICAL SERVICES

WILCOX REFINERY  
BRISTOW, CREEK COUNTY, OKLAHOMA  
TDD #06- 98-03-0009

CONTRACT NO. 68-W6-0013

Prepared for:

U. S. Environmental Protection Agency  
Region 6  
Response and Prevention Branch  
1445 Ross Avenue  
Dallas, Texas 75202-2733

Ms. Tobin Osterberg  
Contracting Officer

April 22, 1998

Prepared by:

Ecology and Environment, Inc.  
Region 6 Superfund Technical Assessment & Response Team  
1999 Bryan Street, Suite 2000  
Dallas, Texas 75201

Date: April 22, 1998

To: Tobin Osterberg, CO  
EPA Region 6, Program Management Branch

Thru: Chris Quina, STL  
Region 6, Superfund Technical Assessment & Response Team

From: Alan Tinker, CFM  
Region 6, Superfund Technical Assessment & Response Team

Subj: Proposed analytical procurement for Wilcox Refinery Site  
Bristow, Creek County, OK  
TDD: #06-98-03-0009  
PAN: #052601SFG1  
NTE: \$14,700.00

Submitted herewith for your review and consent is the justification package for the subject procurement. This justification package is prepared IAW prime contract clause I.9 (SUB-CONTRACTS) subpart (b)(1)(iii), all items required by the subject clause are addressed. The present schedule calls for samples to be shipped the week of April 27, 1998.

A. BACKGROUND

The START has been tasked by the EPA to conduct a site inspection at the Wilcox Refinery Site. The site is an inactive crude oil refinery, which operated from the 1920s until 1963. Wastes present on site include tank bottoms and are located in surface impoundments, an oil pit, above ground storage tanks and contaminated soil. One of the surface impoundment containment structures has been breached allowing discharge to Sand Creek.

B. SCOPE OF WORK

The proposed laboratory is to provide the analyses of 42 soil samples for BTEX, PAHs, TAL metals, TPH and pH and 30 water samples for BTEX and TPH. A full CLP hardcopy data package is required with 14 day verbal and 21 day hardcopy turn around. The laboratory is also responsible for proper sample disposal in accordance with all relevant laws and regulations. Analytical objectives for this effort have been approved by the EPA TM and the TM was notified of the need for a TDD amendment.

C. BID SOLICITATION

The START Contractor prepared bid packages from four firms that have previously expressed interest in this type of study. The bid packages were sent to the labs on 4/20/98 and bids were due 4/21/98. The individual completed and signed solicitations are attached. Once bids were received, a Bid Assessment Form (including only the bidders total price) was completed.

D. COST ANALYSIS

A summary of the proposed costs as submitted in the bid verification forms is shown on the attached Bid Analysis Form. The Regional START PM, CFM and QAO reviewed the bid proposals and historical performance of all bidders and determined that all could perform the required analyses within the project schedule and quality requirements. It was determined that the Ecology and Environment Analytical Service Center (ASC) could provide this service at the lowest competitive cost to the government. The cost to the government as shown on the attached Bid Assessment Form is \$14,700.00 for the ASC, \$16,134.50 for Specialized Assays, the second lowest, \$18,690.00 for the Core Labs - GSA, the third lowest, and \$48,478.80 for Quanterra, the highest. Since none of the bidders were located in the Bristow area, sample shipment costs for all would be equal and were not considered. Based on other recent bid history, the unit costs from the vendors seem reasonable and in the competitive range. The second lowest bidder costs were within 110% of the lowest bidder. IAW Prime Contract clause I.9 the following items are addressed:

- a) Principal elements of the subcontract price negotiations were to obtain the lowest price for the required services in the best interest of the government.
- b) The most significant considerations controlling the establishment of prices were to obtain the required QA/QC analysis at no additional cost to the government.
- c) Cost or pricing data was not required because this is an off the shelf procurement of a commercially available service.
- d) The START Contractor did not rely on the subcontractors cost & pricing data to any extent in determining the price objective or in negotiating the final price.
- e) The START Contractor did not recognize that the cost & pricing data was inaccurate, incomplete or not current because no cost & pricing data was required.
- f) There was not any significant difference between the START Contractors price objective and the price negotiated.
- g) There are no incentive fee or profit plans involved in this procurement.

E. RECOMMENDATION

In consideration of the above, the START recommends that a fixed unit price task order not to exceed \$14,700.00 be awarded to the E&E Analytical Service Center for analyses of the samples at the Wilcox Refinery Site.

Please do not hesitate to contact me if you have any questions regarding the proposed procurement.

pc: David Anderson, START QAO

Attachments

**MEMORANDUM**

PAGE 1

TO: Al Tinker, Region 6 START Subcontracts Manger

THRU: David Anderson (Procurement Chemist)

FROM: Tom Beer(Project Manager)

DATE: 4/22/98

START REGION/OFFICE: 06/Dallas

STATEMENT OF NEED: Please state reasons for requesting a purchase order below:

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The EPA TM has requested that the START obtain analytical services for samples to be collected at the Wilcox Refinery site located in Bristow, OK, TDD 06-98-03-0009, PAN 052601SFG1.

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**Recommended Vendor and Reason:**

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The Ecology and Environment Inc. Analytical Service Center is the recommended vendor based on lowest cost to the government. The vendor is technically capable and is also capable of meeting the required turnaround times.

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**Attachment:**

TDD. PR, Bid Analysis, Written Bid,  
Reps and Certs (if applicable)

**ecology and environment, inc.**  
**PURCHASE REQUISITION**

|  |  |   |  |
|--|--|---|--|
| Vendor: <u>Ecology &amp; Environment</u><br>Address: <u>Analytical Service Center</u><br><u>4493 Walden Ave</u><br><u>Lancaster, NY 14086</u><br>Contact: <u>Caryn Wowtowicz Phone: 716-685-8080</u> |  | Date: <u>4/22/98</u> PR No.: <u>561-9105</u><br>Ship Via: _____ Date Required: <u>4/28/98</u><br>LIN: _____ PO No.: _____<br>Contract No.: <u>68-W6-0013</u> Account: _____<br>Project Number/PAN: <u>KJ6103/052602SFG1</u> |  |
| Ship to: <u>Same as billing</u><br>_____<br>_____<br>Attention: <u>David Anderson</u>  |  | Billing Address: <u>Ecology and Environment, Inc.</u><br><u>1999 Bryan Street, Suite 2000</u><br><u>Dallas, Texas 75201</u><br>Attention: _____   |  |

| Item | Description                              | Quantity | Unit Price | Amount    |
|------|--|----------|------------|-----------|
| 1    | BTEX in soil by 8021                     | 42       | 40.00      | 1680.00   |
| 2    | PAH in soil by 8310                      | 42       | 110.00     | 4620.00   |
| 3    | TAL metals in soil by 6010B/7471 E&E SOW | 42       | 80.00      | 3360.00   |
| 4    | TPH in soil by TNREE 1005                | 42       | 55.00      | 2310.00   |
| 5    | pH in soil by 9045C                      | 42       | 5.00       | 210.00    |
| 6    | BTEX in water by 8021                    | 30       | 40.00      | 1200.00   |
| 7    | TPH in water by TNRCC 1005               | 24       | 55.00      | 1320.00   |
| 8    | Full CLP like data deliverable           |          |            | NC        |
| 9    | 14 day FAX, 21 day Hardcopy Turnaround   |          |            | NC        |
|      |  |          |            |           |
|      | TOTAL                                    |          |            | 14,700.00 |

Purpose/Justification (continue on back if necessary) Analysis of samples to be collected at the Wilcox Refinery site, located in Bristow, OK, TDD 06-98-03-0009.

| ALTERNATE SOURCES |                    |                                     |           |
|-------------------|--------------------|-------------------------------------|-----------|
| Item              | Vendor             | Comment                             | Amount    |
| 1-9               | Core Labs - GSA    | higher cost                         | 18,690.00 |
| 1-9               | Specialized Assays | higher cost                         | 16,134.50 |
| 1-9               | Quanterra          | higher cost, cannot meet turnaround | 48,478.80 |
|                   |                    |                                     |           |
|                   |                    |                                     |           |

|  |  |
|--|--|
| Printed Name of Requestor: <u>David Anderson</u> | Signature of Requestor: <u><i>David Anderson</i></u> |
|--|--|



Approved by/Date:

1. \_\_\_\_\_

3. \_\_\_\_\_

2. \_\_\_\_\_

4. \_\_\_\_\_

### **BID ANALYSIS**

VENDOR (1): Ecology & Environment Analytical Service Center

ADDRESS: 4493 Walden Ave, Lancaster, NY 14086

TELEPHONE: 716-685-8080

CONTACT PERSON: Caryn Wojtowicz

VENDOR (2): Core Lab - Gulf States Analytical

ADDRESS: 6310 Rothway, Houston, TX 77040

TELEPHONE: 713-690-4444

CONTACT PERSON: Sally Roan

VENDOR (3): Quanterra Environmental Services

ADDRESS: 5307 Industrial Oaks Blvd. # 160, Austin, TX 78735

TELEPHONE: 512-892-6684

CONTACT PERSON: Sandra Green

| <b><u>CONTACT BREAKDOWN OF WORK TO BE PERFORMED:</u></b> | <b><u>UNIT COST PER VENDOR</u></b> |          |           |
|--|------------------------------------|----------|-----------|
|  | (1)                                | (2)      | (3)       |
| 1. BTEX in soil by 8021                                  | 40.00                              | 35.00    | 150.00    |
| 42 samples + 6 QA  | X 42 a                             | X 42 a   | X 48      |
| Item 1 subtotal  | 1680.00                            | 1470.00  | 7200.00   |
| 2. PAH in soil by 8310                                   | 110.00                             | 125.00   | 210.00    |
| 42 samples + 6 QA  | X 42 a                             | X 42 a   | X 48      |
| Item 2 subtotal  | 4620.00                            | 5250.00  | 10,080.00 |
| 3. TAL metals in soil by 6010B/7471 E&E SOW              | 80.00                              | 165.00   | 250.00    |
| 42 samples + 6 QA  | X 42 a                             | X 42 a   | X 48      |
| Item 3 subtotal  | 3360.00                            | 6930.00  | 12,000.00 |
| 4. TPH in soil by TNRCC 1005                             | 55.00                              | 55.00    | 125.00    |
| 42 samples + 6 QA  | X 42 a                             | X 42 a   | X 48      |
| Item 4 subtotal  | 2310.00                            | 2310.00  | 6000.00   |
| 5. pH in soil by 9045C                                   | 5.00                               | 5.00     | 10.00     |
| 42 samples + 3 QA  | X 42 a                             | X 42 a   | X 45      |
| Item 5 subtotal  | 210.00                             | 210.00   | 450.00    |
| 6. BTEX in water by 8021                                 | 40.00                              | 35.00    | 150.00    |
| 30 samples + 4 QA  | X 30 a                             | X 30 a   | X 34      |
| Item 6 subtotal  | 1200.00                            | 1050.00  | 5100.00   |
| 7. TPH in water by TNRCC 1005                            | 55.00                              | 55.00    | 125.00    |
| 24 samples + 4 QA  | X 24 a                             | X 24 a   | X 28      |
| Item 7 subtotal  | 1320.00                            | 1320.00  | 3500.00   |
| 8. Full CLP like data deliverable                        | NC                                 | 150.00   | 3548.80   |
| 9. 14 day FAX, 21 day hard copy turnaround               | NC                                 | NC       |           |
| 10. Sample disposal                                      | NC                                 | NC       | 570.00    |
| <b>TOTAL \$</b>  | 14700.00                           | 18690.00 | 48,478.80 |

## BID ANALYSIS

VENDOR (4): Specialized Assays, Inc.

ADDRESS: 2960 Foster Creighton Dr., Nashville, TN 37204

TELEPHONE: 615-726-0177

CONTACT PERSON: Jerry Burgess

VENDOR (5):

ADDRESS:

TELEPHONE:

CONTACT PERSON:

VENDOR (6):

ADDRESS:

TELEPHONE:

CONTACT PERSON:

| <u>CONTACT BREAKDOWN OF WORK TO BE PERFORMED:</u> | <u>UNIT COST PER VENDOR</u> |     |     |
|---|-----------------------------|-----|-----|
|   | (4)                         | (5) | (6) |
| 1. BTEX in soil by 8021                           | 38.25                       |     |     |
| 42 samples + 6 QA                                 | X 48                        |     |     |
| Item 1 subtotal                                   | 1836.00                     |     |     |
| 2. PAH in soil by 8310                            | 96.00                       |     |     |
| 42 samples + 6 QA                                 | X 48                        |     |     |
| Item 2 subtotal                                   | 4608.00                     |     |     |
| 3. TAL metals in soil by 6010B/7471 E&E SOW       | 90.00                       |     |     |
| 42 samples + 6 QA                                 | X 48                        |     |     |
| Item 3 subtotal                                   | 4320.00                     |     |     |
| 4. TPH in soil by TNRCC 1005                      | 50.00                       |     |     |
| 42 samples + 6 QA                                 | X 48                        |     |     |
| Item 4 subtotal                                   | 2400.00                     |     |     |
| 5. pH in soil by 9045C                            | 6.00                        |     |     |
| 42 samples + 3 QA                                 | X 45                        |     |     |
| Item 5 subtotal                                   | 270.00                      |     |     |
| 6. BTEX in water by 8021                          | 38.25                       |     |     |
| 30 samples + 4 QA                                 | X 34                        |     |     |
| Item 6 subtotal                                   | 1300.50                     |     |     |
| 7. TPH in water by TNRCC 1005                     | 50.00                       |     |     |
| 24 samples + 4 QA                                 | X 28                        |     |     |
| Item 7 subtotal                                   | 1400.00                     |     |     |
| 8. Full CLP like data deliverable                 | NC                          |     |     |
| 9. 14 day FAX, 21 day hard copy turnaround        | NC                          |     |     |
| 10. Sample disposal                               | NC                          |     |     |
| <b>TOTAL \$</b>                                   | 16134.50                    |     |     |

### Reasonable of Bids:

a - no additional charge for QA analyses

Vendor 3 could not meet required turnaround times, bid prices are out of range.

Bids from vendors 1,2 and 4 are reasonable. 2<sup>nd</sup> lowest did within 10% of lowest bid.

SMALL BUSINESSES: NO

SMALL DISADVANTAGED BUSINESS: NO

WOMEN-OWNED BUSINESS: NO

COUNTY WHERE CHOSEN VENDOR IS LOCATED: ERIE, NY \_\_\_\_\_



ANALYTICAL SERVICES CENTER  
Ecology and Environment, Inc. (E & E)  
4493 Walden Avenue  
Lancaster, New York 14086  
Telephone: (716) 685-8080 Fax: (716) 685-0852

*International Specialists in the Environment*

**Our pledge is to provide the highest  
quality analytical results in a timely,  
efficient, and economical manner.**

### TELECOPIER TRANSMISSION FORM

|  |  |
|--|--|
| DATE: 4/20/98  | TIME:  |
| PROJECT NUMBER: XG120-   | TOTAL NUMBER OF PAGES (Including Transmission Form): 5   |
| TO: DAVID ANDERSON   |  |
| COMPANY: ETE DALLAS  |  |
| TELECOPIER:  |  |
| FROM: Gary Strobel Jr  |  |
| SPECIAL INSTRUCTIONS:  |  |
| FULL SERVICE CAPABILITY:<br>Atomic Absorption Analysis<br>Inductively Coupled Plasma Analysis<br>Gas Chromatography<br>Gas Chromatography/Mass Spectrometry<br>High Performance Liquid Chromatography<br>Ion Chromatography, Fourier Transform Infra-red<br>Ultraviolet/Visible Spectroscopy<br>Air (Canisters, Bags, Tenax, Charcoal) | Chlorophenols, AOX<br>Immunoassay<br>Nitroaromatics (Explosives), Chemical Agents<br>NPDES/SPDES<br>Soil Gas Screening (Field or Laboratory)<br>TCLP<br>TPH-BETX |



## **ecology and environment, inc.**

International Specialists in the Environment

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### **ANALYTICAL SERVICES CENTER**

4493 Walder Avenue

Lancaster, New York 14086

Tel. (716) 685-8080, Fax: (716) 685-0852

April 21, 1998

Mr. David Anderson  
Procurement Chemist - START Region VI  
Ecology and Environment Inc.  
1999 Bryan Street  
Dallas, Texas 75201

Dear Mr. Anderson,

Ecology and Environment's Analytical Services Center is pleased to respond to your Request for Proposal for analytical laboratory services referenced case number 6S154.

The analytical quote request form has been completed, signed and attached, as has the analytical requirements summary, and the bid specification form.

Please contact me with any additional questions or concerns.

Sincerely,

Caryn Wojtowicz  
ASC START Project Manager

E&E Ref: STARTVI-1

recycled paper

ecology and environment

recycled paper

## ANALYTICAL REQUIREMENTS SUMMARY

**PROJECT (CASE) NUMBER: 6S154**

**ANALYSIS REQUESTED:** BTEX, PAH, TAL metals, TPH and pH in soil, BTEX and TPH in water. BTEX by 8021B, PAH by 8310, TAL metals by 12/95 E&E SOW, TPH by TNRCC 1005, PH by 9045C.

**NUMBER OF SAMPLES BY MATRIX:** 42 soil, 30 water (6 water trip blank BTEX only)

**LAB QA REQUIREMENTS:**

**MS: 3 for BTEX, PAH, TAL metals, TPH in soil; 2 for BTEX and TPH in water.**

**MSD: 3 for BTEX, PAH and TPH in soil; 2 for BTEX and TPH in water.**

**DUP: 3 for TAL metals and pH in soil**

TOTAL NUMBER OF ANALYSES REQUESTED: 48 BTEX, PAH, TAL metals and TPH in soil, 45 pH in soil, 34 BTEX in water, 28 TPH in water.

**DELIVERABLE PACKAGE REQUIRED:** Full CLP like deliverable per attached SOWs.

**DELIVERY SCHEDULE:** 14 calendar day FAX, 21 calendar day hard copy.

**BEGINNING SHIP DATE: 4/27/98**

**END SHIP DATE: 5/4/98**

**PROJECT MANAGER:** Tom Bee:

**PROCUREMENT CHEMIST:** David Anderson

**OTHER:** 10 of the 30 water samples are field blanks, 6 trip blanks, 1 field blank and 3 equipment blanks. Laboratory QA (MS/MSD) shall not be conducted on sample designated as blanks.

PLEASE PROVIDE, VERIFY OR MODIFY THE UNIT AND TOTAL BID COSTS FOR THE ABOVE PROJECT AND RETURN SIGNED COPIES OF ALL PAGES TO THE E & E PROCUREMENT CHEMIST BY 12:00 NOON, 04/21/98.

Ecology and Environment Inc ASC  
LABORATORY

Long Hsu  
LABORATORY AGENT

4/21/78  
DATE

**E & E ANALYTICAL QUOTE REQUEST FORM  
BID SPECIFICATION - TO BE COMPLETED BY E & E**

|  |                              |   |                            |
|--|------------------------------|---|----------------------------|
| FROM (E & E REQUESTOR): <u>David Anderson</u>  |                              | TO (LAB CONTACT): <u>Caryn Wollwicz</u>   |                            |
| OFFICE NAME/ADDRESS: <u>1999 Bryan St. Ste. 2000</u><br><u>Dallas, TX 75201</u>  |                              | LAB NAME/ADDRESS: <u>E&amp;E ASC</u><br><u>4493 Walden Ave. Lancaster, NY 14086</u> |                            |
| PHONE #: <u>(214) 220-0318</u>   | FAX #: <u>(214) 855-1422</u> | PHONE #: <u>716-685-8080</u>  | FAX #: <u>716-685-0852</u> |
| SITE NAME: <u>6S154</u>  | PAN #: <u>052601SFG1</u>     | REQUEST DATE: <u>4/20/98</u> QUOTE DEADLINE: <u>12 noon 4/21/98</u>                 |                            |
| SHIPMENT INFORMATION:<br>DATE OF FIRST SHIPMENT: <u>4/27/98</u> FREQUENCY OF SHIPMENTS: <u>daily</u> # SAMPLES/SHIPMENT: <u>11</u> TOTAL # OF SAMPLES: <u>72</u> |                              |   |                            |

**REQUESTED ANALYSES/BROKEN DOWN BY MATRIX AND PARAMETER**

| SAME SAMPLE INDICATED BY BRACKETS | # OF SAMPLES | ANALYTICAL PARAMETERS | METHOD #   | SAMPLE MATRIX | #/TYPE OF EXTRA QA REQUESTS (MS/MSD, ETC.) | OTHER REQUIREMENTS |
|-----------------------------------|--------------|-----------------------|------------|---------------|--|--------------------|
|                                   | 42           | BTEX                  | 8021       | soil/sediment | 3 MS/MSD                                   | see attached SOW   |
|                                   | 42           | PAH                   | 8310       | soil/sediment | 3 MS/MSD                                   | see attached SOW   |
|                                   | 42           | TAL metals            | E&E SOW    | soil/sediment | 3 MS/DUP                                   | see E&E 12/95 SOW  |
|                                   | 42           | TPH                   | TNRCC 1005 | soil/sediment | 3 MS/DUP                                   | see method         |
|                                   | 42           | pH                    | 8045C      | soil/sediment | 3 DUP                                      |                    |
|                                   | 30           | BTEX                  | 8021       | water         | 2 MS/MSD                                   | see attached SOW,  |
|                                   | 24           | TPH                   | TNRCC 1005 | water         | 2 MS/MSD                                   | see method         |

- 1) DATA CATEGORY (DEFINITIVE, SCREENING WITH DEFINITIVE CONFIRMATION OR SCREENING ONLY): DEFINITIVE
- 2) SAMPLE DISPOSAL BY LAB (YES, NO, OR OTHER): YES
- 3) TURNAROUND TIME: FAX= 14 Calendar days HARDCOPY/ELECT= 21 calendar days [IN CALENDAR OR WORK DAYS]
- 4) REQUIRED QA/QC DELIVERABLE PACKAGE (FULL PACKAGE OR RESULTS ONLY): FULL REFER TO ATTACHED SOWs FOR A LIST OF SPECIFIC DOCUMENTS REQUIRED.
- 5) REQUIRED DATA QUALITY: ALL ANALYTICAL DATA MUST MEET CRITERIA DEFINED IN EPA OSWER DIRECTIVE 9360.4-01/9355.801 FOR THE SELECTED DATA CATEGORY AND ANALYTICAL PARAMETER. APPLICABLE EXCERPTS OF THESE DOCUMENTS WILL BE PROVIDED TO THE LAB BY REQUEST.
- 6) ADDITIONAL TERMS AND CONDITIONS APPLICABLE TO SUBCONTRACTOR ANALYTICAL SERVICES UNDER GOVERNMENT CONTRACTS: REFER TO ATTACHMENT 2.

SIGNATURE OF LAB AGENT: [Signature]



**E & E ANALYTICAL QUOTE REQUEST FORM  
BID QUOTE - TO BE COMPLETED BY LABORATORY (3)**

| SAME SAMPLE INDICATED BY BRACKETS | VOL/ PRES/ CONT (1) | ANALYTICAL PARAMETER/ METHOD # | SAMPLE MATRIX | TURNAROUND TIME VERBAL/ HARDCOPY | UNIT COST FOR SPECIFIED TURNAROUND | # OF SAMPLES | TOTAL ANALYSIS COST (UNIT COST X # SAMPLES) | UNIT COST/TYPE OF EXTRA QA RE-QUESTS (MS/MSD, ETC.) (2) | # OF EXTRA QA RE-QUESTS | TOTAL EXTRA QA COST (UNIT COST X # REQUEST) |
|-----------------------------------|---------------------|--------------------------------|---------------|----------------------------------|------------------------------------|--------------|---|---|-------------------------|---|
|                                   |                     | BTEX                           | soil          | 14/21                            | 40                                 | 42           | 1680  | NO CHARGE   | 6                       | 0   |
|                                   |                     | PAH                            | soil          | 14/21                            | 110                                | 42           | 4620  | "   | 6                       | 0   |
|                                   |                     | TAL metals                     | soil          | 14/21                            | 80                                 | 42           | 3360  | "   | 6                       | 0   |
|                                   |                     | TPH                            | soil          | 14/21                            | 55                                 | 42           | 2310  | "   | 6                       | 0   |
|                                   |                     | pH                             | soil          | 14/21                            | 5                                  | 42           | 210   | "   | 6                       | 0   |
|                                   |                     | BTEX                           | water         | 14/21                            | 40                                 | 30           | 1200  | "   | 4                       | 0   |
|                                   |                     | TPH                            | water         | 14/21                            | 55                                 | 24           | 1320  | "   | 4                       | 0   |

(1) INDICATE LAB REQUIREMENTS FOR SIMPLE VOLUMES, PRESERVATIVES, AND CONTAINER USE BRACKETS TO INDICATE OF VOLUMES ARE FOR THE SAME SAMPLE OR ARE REQUIRED FOR SPECIFIC PARAMETERS.

(2) ONLY APPLICABLE FOR SPECIAL QA REQUESTS - METHOD REQUIRED QA SHOULD BE INCLUDED I SAMPLE ANALYSIS COST.

(3) REFER TO PAGE 1 FOR SPECIFIC INFORMATION ON REQUESTED ANALYSES.

**ADDITIONAL COSTS:**

SURCHARGE FOR QA/QC DELIVERABLE PACKAGE (DEFINED ON PG 1 AND ATTACHMENT 1): \_\_\_\_\_

DISPOSAL COST (SPECIFY IF PER CONTAINER OR FOR TOTAL JOB): \_\_\_\_\_

OTHER COST: \_\_\_\_\_

DISCOUNTS: \_\_\_\_\_

IS VERBAL PO# OK? (CIRCLE ONE): YES NO

IS LAB PICKUP INCLUDED? (CIRCLE ONE): YES NO

ARE SAMPLE CONTAINERS/PAPERWORK INCLUDED? (CIRCLE ONE): YES NO

**LAB CLASSIFICATION:**

SMALL BUSINESS (CIRCLE ONE):

YES NO IF YES, ID#: \_\_\_\_\_

SMALL DISADVANTAGED BUSINESS (CIRCLE ONE):

YES NO IF YES, ID#: \_\_\_\_\_

WOMAN-OWNED BUSINESS (CIRCLE ONE):

YES NO IF YES, ID#: \_\_\_\_\_

MINORITY-OWNED BUSINESS (CIRCLE ONE):

YES NO IF YES, ID#: \_\_\_\_\_

INDICATE PARISH/COUNTY AND STATE BUSINESS IS LOCATED IN: ERIE COUNTY, NY

**BID TOTAL:** 14,700

I HAVE READ AND AGREE TO ALL TERMS OF THIS BID REQUEST, ATTACHMENTS AND QUOTE.  
PLEASE SIGN AND RETURN BOTH BID SPECIFICATION AND BID QUOTE SHEETS)

SIGNATURE OF LAB AGENT: \_\_\_\_\_

LAB NAME: Ecology AND Environment INC



## GULF STATES ANALYTICAL

## FACSIMILE COVER PAGE

**CONFIDENTIALITY NOTICE**

The documents included in this facsimile from Core Laboratories contain information that is confidential or privileged, or both, and is intended only for the use of the individual or entity named on this facsimile cover letter. Any disclosure, copying, distribution, dissemination, or use of this information by any person other than the intended recipient is prohibited. If you have received this facsimile in error, please notify us by telephone immediately at (713) 690-4444 so that we can arrange for either the retrieval of the transmitted documents at no cost to you, or destruction of the transmitted documents if authorization is granted by us. All analytical reports, interpretations, or information furnished by Core Laboratories to its customers are preliminary data only. Due to the problems that can occur with the transmission of data via fax, Core Laboratories will not guarantee or assume any responsibility for the following transmission of data. If any of the following information is not legible or clear, we encourage our customers to verify the data by phoning our office immediately or by examination of the final analytical report.

DATE: 4/21 FAX NUMBER: 214 238 855-1422FOR: David AndersonCOMPANY: E&EFROM: Sally RoanTOTAL NUMBER OF PAGES INCLUDING COVER PAGE: 4MESSAGE: Quote

**"CORE LAB - GULF STATES ANALYTICAL  
RECOGNIZED AS  
ONE OF THE TOP TEN HIGHEST RATED LABORATORIES"**

ANALYTICAL STANDARDS, INCORPORATED (ASI) 1996

PLEASE CALL FOR MORE DETAILS

IF YOU HAVE ANY DIFFICULTY WITH THIS TRANSMISSION, PLEASE CALL 713-690-4444.

Core Laboratories, Inc.  
6310 Rothway, Houston, Texas 77040, (713) 690-4444, Fax (713) 690-5646

RECEIVED DATE

**PROJECT (CASE) NUMBER: 6S154**

**NUMBER OF SAMPLES BY MATRIX: 42 soil, 30 water (6 water trip blank BTEX only)**

**LAB QA REQUIREMENTS:**

MS; 3 for BTEX, PAH, TAL metals, TPH in soil; 2 for BTEX and TPH in water.

**MSD: 3 for BTEX, PAH and TPH in soil; 2 for BTEX and TPH in water.**

**DUP: 3 for TAL metals and pH in soil.**

**TOTAL NUMBER OF ANALYSES REQUESTED:** 48 BTEX, PAH, TAL metals and TPH in soil, 45 pH in soil, 34 BTEX in water, 28 TPH in water.

**DELIVERABLE PACKAGE REQUIRED:** Full CLP like deliverable per attached SOWs.

**DELIVERY SCHEDULE:** 14 calendar day FAX, 21 calendar day hard copy.

**BEGINNING SHIP DATE: 4/27/98**

**END SHIP DATE: 5/4/98**

**PROJECT MANAGER:** Tom Beet

**PROCUREMENT CHEMIST:** David Anderson

**OTHER:** 10 of the 30 water samples are field blanks, 6 trip blanks, 1 field blank and 3 equipment blanks. Laboratory QA (MS/MSD) shall not be conducted on sample designated as blanks.

PLEASE PROVIDE, VERIFY OR MODIFY THE UNIT AND TOTAL BID COSTS FOR THE ABOVE PROJECT AND RETURN SIGNED COPIES OF ALL PAGES TO THE E & E PROCUREMENT CHEMIST BY 12:00 NOON, 04/21/98.

Core Laboratories Inc - Gulf States Analytical  
LABORATORY

**LABORATORY AGENT**

4/21/98  
DATE

recycled paper  
ref. paperE & E ANALYTICAL QUOTE REQUEST FORM  
BID SPECIFICATION - TO BE COMPLETED BY E & E

|  |  |  |  |
|--|--|--|--|
| FROM (E & E REQUESTOR): <u>David Anderson</u>  |  | TO (LAB CONTACT): <u>Sally Roan</u>  |  |
| OFFICE NAME/ADDRESS: <u>1999 Bryan St. Ste. 2000</u><br><u>Dallas, TX 75201</u>  |  | LAB NAME/ADDRESS: <u>Cove Laboratories</u><br><u>6310 Rothway, Houston, TX 77040</u> |  |
| PHONE #: <u>(214) 220-0318</u> FAX #: <u>(214) 855-1422</u>  |  | PHONE #: <u>713-690-4444</u> FAX #: <u>713-690-5646</u>                              |  |
| SITE NAME: <u>GS154</u> PAN #: <u>052601SFG1</u>   |  | REQUEST DATE: <u>4/20/98</u> QUOTE DEADLINE: <u>12 noon 4/21/98</u>                  |  |
| SHIPMENT INFORMATION:<br>DATE OF FIRST SHIPMENT: <u>4/27/98</u> FREQUENCY OF SHIPMENTS: <u>daily</u> # SAMPLES/SHIPMENT: <u>11</u> TOTAL # OF SAMPLES: <u>72</u> |  |  |  |

## REQUESTED ANALYSES/BROKEN DOWN BY MATRIX AND PARAMETER

| SAME SAMPLE INDICATED BY BRACKETS | # OF SAMPLES | ANALYTICAL PARAMETERS | METHOD #                 | SAMPLE MATRIX | #/TYPE OF EXTRA QA REQUESTS (MS/MSD, ETC.) | OTHER REQUIREMENTS |
|-----------------------------------|--------------|-----------------------|--------------------------|---------------|--|--------------------|
|                                   | 42           | BTEX                  | <u>8021 8020A</u>        | soil/sediment | 3 MS/MSD                                   | see attached SOW   |
|                                   | 42           | PAH                   | <u>8310</u>              | soil/sediment | 3 MS/MSD                                   | see attached SOW   |
|                                   | 42           | TAL metals            | <u>E&amp;E SOW 4010A</u> | soil/sediment | 3 MS/DUP                                   | see E&E 12/95 SOW  |
|                                   | 42           | TPH                   | <u>TNRCC 1005</u>        | soil/sediment | 3 MS/DUP                                   | see method         |
|                                   | 42           | pH                    | <u>9045C 9045B</u>       | soil/sediment | 3 DUP                                      |                    |
|                                   | 30           | BTEX                  | <u>8021 8020</u>         | water         | 2 MS/MSD                                   | see attached SOW,  |
|                                   | 24           | TPH                   | <u>TNRCC 1005</u>        | water         | 2 MS/MSD                                   | see method         |

- 1) DATA CATEGORY (DEFINITIVE, SCREENING WITH DEFINITIVE CONFIRMATION OR SCREENING ONLY): DEFINITIVE
- 2) SAMPLE DISPOSAL BY LAB (YES, NO, OR OTHER): YES
- 3) TURNAROUND TIME: FAX= 14 calendar days HARDCOPY/ELECT= 21 calendar days [IN CALENDAR OR WORK DAYS]
- 4) REQUIRED QA/QC DELIVERABLE PACKAGE (FULL PACKAGE OR RESULTS ONLY): FULL REFER TO ATTACHED SOWs FOR A LIST OF SPECIFIC DOCUMENTS REQUIRED.
- 5) REQUIRED DATA QUALITY: ALL ANALYTICAL DATA MUST MEET CRITERIA DEFINED IN EPA OSWER DIRECTIVE 9360.4-01/9355.901 FOR THE SELECTED DATA CATEGORY AND ANALYTICAL PARAMETER. APPLICABLE EXCERPTS OF THESE DOCUMENTS WILL BE PROVIDED TO THE LAB BY REQUEST.
- 6) ADDITIONAL TERMS AND CONDITIONS APPLICABLE TO SUBCONTRACTOR ANALYTICAL SERVICES UNDER GOVERNMENT CONTRACTS: REFER TO ATTACHMENT 2.

SIGNATURE OF LAB AGENT: Sally Roanecology and environment  
ecology and environment

**E & E ANALYTICAL QUOTE REQUEST FORM**  
**BID QUOTE - TO BE COMPLETED BY LABORATORY (3)**

| SAME SAMPLE INDICATED BY BRACKETS | VOL/ PRES/ CONT (1) | ANALYTICAL PARAMETER/ METHOD # | SAMPLE MATRIX | TURNAROUND TIME VERBAL/ HARDCOPY | UNIT COST FOR SPECIFIED TURNAROUND | # OF SAMPLES | TOTAL ANALYSIS COST (UNIT COST X # SAMPLES) | UNIT COST/TYPE OF EXTRA QA REQUESTS (MS/MSD, ETC.) (2) | # OF EXTRA QA REQUESTS | TOTAL EXTRA QA COST (UNIT COST X # REQUEST) |
|-----------------------------------|---------------------|--------------------------------|---------------|----------------------------------|------------------------------------|--------------|---|--|------------------------|---|
| -                                 | 2a                  | BTEX                           | soil          | 14/21                            | 35.00                              | 42           | 1,470.                                      | <input checked="" type="checkbox"/>                    | 6                      | <input checked="" type="checkbox"/>         |
|                                   | 8a                  | PAH                            | soil          | 14/21                            | 125.00                             | 42           | 5,250.                                      | <input checked="" type="checkbox"/>                    | 6                      | ↓   |
|                                   |                     | TAL metals                     | soil          | 14/21                            | 165.00                             | 42           | 6,930.                                      | <input checked="" type="checkbox"/>                    | 6                      |   |
|                                   |                     | TPH                            | soil          | 14/21                            | 55.00                              | 42           | 2,310.                                      | <input checked="" type="checkbox"/>                    | 6                      |   |
|                                   |                     | pH                             | soil          | 14/21                            | 5.00                               | 42           | 210.  | <input checked="" type="checkbox"/>                    | 6                      |   |
|                                   |                     | BTEX                           | water         | 14/21                            | 35.00                              | 30           | 1,050.                                      | <input checked="" type="checkbox"/>                    | 4                      |   |
| -                                 | 8b                  | TPH                            | water         | 14/21                            | 55.00                              | 24           | 1,320.                                      | <input checked="" type="checkbox"/>                    | 4                      |   |

(1) INDICATE LAB REQUIREMENTS FOR SAMPLE VOLUMES, PRESERVATIVES, AND CONTAINER USE BRACKETS TO INDICATE OF VOLUMES ARE FOR THE SAME SAMPLE OR ARE REQUIRED FOR SPECIFIC PARAMETERS.

(2) ONLY APPLICABLE FOR SPECIAL QA REQUESTS - METHOD REQUIRED QA SHOULD BE INCLUDED I SAMPLE ANALYSIS COST.

(3) REFER TO PAGE 1 FOR SPECIFIC INFORMATION ON REQUESTED ANALYSES.

**ADDITIONAL COSTS:**

SURCHARGE FOR QA/QC DELIVERABLE PACKAGE (DEFINED ON PG 1 AND ATTACHMENT 1): \$450.

DISPOSAL COST (SPECIFY IF PER CONTAINER OR FOR TOTAL JOB): NA

OTHER COST: NA

IS VERBAL POK OK? (CIRCLE ONE): ☒ YES ☐ NO

ARE SAMPLE CONTAINERS/PAPERWORK INCLUDED? (CIRCLE ONE): ☒ YES ☐ NO

DISCOUNTS: included

IS LAB PICKUP INCLUDED? (CIRCLE ONE): YES ☒ NO if out of Houston

**LAB CLASSIFICATION:**

SMALL BUSINESS (CIRCLE ONE):

YES ☒ NO ☐ IF YES, ID#:

SMALL DISADVANTAGED BUSINESS (CIRCLE ONE):

YES ☒ NO ☐ IF YES, ID#:

WOMAN-OWNED BUSINESS (CIRCLE ONE):

YES ☒ NO ☐ IF YES, ID#:

MINORITY-OWNED BUSINESS (CIRCLE ONE):

YES ☒ NO ☐ IF YES, ID#:

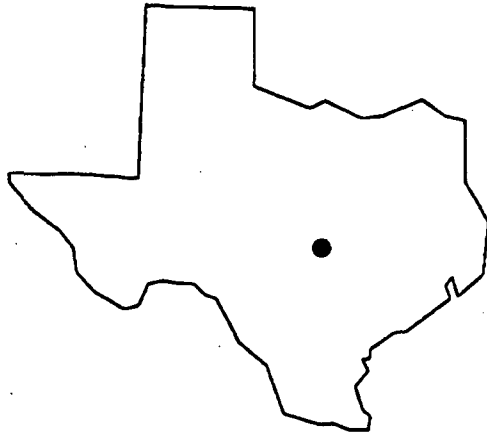
INDICATE PARISH/COUNTY AND STATE BUSINESS IS LOCATED IN: Harris

**BID TOTAL: \$18,690.00**

I HAVE READ AND AGREE TO ALL TERMS OF THIS BID REQUEST, ATTACHMENTS AND QUOTE.  
 PLEASE SIGN AND RETURN BOTH BID SPECIFICATION AND BID QUOTE SHEETS)

SIGNATURE OF LAB AGENT: Salley Roan

LAB NAME: Core Laboratories - GSA

Page 1 of 3  
4/21/98**Environmental  
Services**

## FAX COVER SHEET

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To: David AndersonCompany: EEE ChemistFax No. (214) 855-1422

Phone No. \_\_\_\_\_

From: Sandra GreenRemarks: Bid Pkg for 12S154**Quanterra**

5307 Industrial Oaks Blvd. #160

Austin, TX 78735

Telephone (512)892-6684 Fax (512)892-6652

recycled paper

ecology and environment

## DATE \_\_\_\_\_

E & E ANALYTICAL QUOTE REQUEST FORM  
BID SPECIFICATION - TO BE COMPLETED BY E & E

|   |  |   |  |
|---|--|---|--|
| FROM (E & E REQUESTOR): <u>David Anderson</u>   |  | TO (LAB CONTACT): <u>Sandra Green</u>                               |  |
| OFFICE NAME/ADDRESS: <u>1999 Bryan St. Ste. 2000</u>  |  | LAB NAME/ADDRESS: <u>Quanterra</u>                                  |  |
| <u>Dallas, TX 75201</u>   |  | <u>5307 Industrial Oaks Blvd. # 160, Austin, TX 78535</u>           |  |
| PHONE #: <u>(214) 220-0318</u> FAX #: <u>(214) 855-1422</u>   |  | PHONE #: <u>512-892-6604</u> FAX #: <u>512-892-6652</u>             |  |
| SITE NAME: <u>6S154</u> PAN #: <u>052601SFG1</u>  |  | REQUEST DATE: <u>4/20/98</u> QUOTE DEADLINE: <u>12 noon 4/21/98</u> |  |
| SHIPMENT INFORMATION:   |  |   |  |
| DATE OF FIRST SHIPMENT: <u>4/27/98</u> FREQUENCY OF SHIPMENTS: <u>daily</u> # SAMPLES/SHIPMENT: <u>11</u> TOTAL # OF SAMPLES: <u>72</u> |  |   |  |

## REQUESTED ANALYSES/BROKEN DOWN BY MATRIX AND PARAMETER

| SAME SAMPLE INDICATED BY BRACKETS | # OF SAMPLES | ANALYTICAL PARAMETERS | METHOD #   | SAMPLE MATRIX | #/TYPE OF EXTRA QA REQUESTS (MS/MSD, ETC.) | OTHER REQUIREMENTS |
|-----------------------------------|--------------|-----------------------|------------|---------------|--|--------------------|
|                                   | 42           | BTEX                  | 8021       | soil/sediment | 3 MS/MSD                                   | see attached SOW   |
|                                   | 42           | PAH                   | 8310       | soil/sediment | 3 MS/MSD                                   | see attached SOW   |
|                                   | 42           | TAL metals            | E&E SOW    | soil/sediment | 3 MS/DUP                                   | see E&E 12/95 SOW  |
|                                   | 42           | TPH                   | TNRCC 1005 | soil/sediment | 3 MS/DUP                                   | see method         |
|                                   | 42           | pH                    | 9045C      | soil/sediment | 3 DUP                                      |                    |
|                                   | 30           | BTEX                  | 8021       | water         | 2 MS/MSD                                   | see attached SOW,  |
|                                   | 24           | TPH                   | TNRCC 1005 | water         | 2 MS/MSD                                   | see method         |

- 1) DATA CATEGORY (DEFINITIVE, SCREENING WITH DEFINITIVE CONFIRMATION OR SCREENING ONLY): DEFINITIVE
- 2) SAMPLE DISPOSAL BY LAB ( YES, NO, OR OTHER): YES
- 3) TURNAROUND TIME: FAX= 14 Calendar days HARDCOPY/ELECT= 21 calendar days (IN CALENDAR OR WORK DAYS)
- 4) REQUIRED QA/QC DELIVERABLE PACKAGE (FULL PACKAGE OR RESULTS ONLY): FULL REFER TO ATTACHED SOWs FOR A LIST OF SPECIFIC DOCUMENTS REQUIRED.
- 5) REQUIRED DATA QUALITY: ALL ANALYTICAL DATA MUST MEET CRITERIA DEFINED IN EPA OSWER DIRECTIVE 9360.4-01/9355.901 FOR THE SELECTED DATA CATEGORY AND ANALYTICAL PARAMETER. APPLICABLE EXCERPTS OF THESE DOCUMENTS WILL BE PROVIDED TO THE LAB BY REQUEST.
- 6) ADDITIONAL TERMS AND CONDITIONS APPLICABLE TO SUBCONTRACTOR ANALYTICAL SERVICES UNDER GOVERNMENT CONTRACTS: REFER TO ATTACHMENT 2.

SIGNATURE OF LAB AGENT: 



**E & E ANALYTICAL QUOTE REQUEST FORM  
BID QUOTE - TO BE COMPLETED BY LABORATORY (3)**

Reference Quote: 23386

| SAME SAMPLE INDICATED BY BRACKETS | VOL/ PRES/ CONT (1) | ANALYTICAL PARAMETER/ METHOD # | SAMPLE MATRIX | TURNAROUND TIME VERBAL/ HARDCOPY | UNIT COST FOR SPECIFIED TURNAROUND | # OF SAMPLES | TOTAL ANALYSIS COST (UNIT COST X # SAMPLES) | UNIT COST/TYPE OF EXTRA QA REQUESTS (MS/MSD, ETC.) (2) | # OF EXTRA QA REQUESTS | TOTAL EXTRA QA COST (UNIT COST X # REQUEST) |
|-----------------------------------|---------------------|--------------------------------|---------------|----------------------------------|------------------------------------|--------------|---|--|------------------------|---|
|                                   |                     | BTEX                           | soil          | X14/21/28                        | 150.00                             | 42           | 6,300                                       | 150.00   | 6                      | 900.00                                      |
|                                   |                     | PAH                            | soil          | X14/21/28                        | 210.00                             | 42           | 8,820                                       | 210.00   | 6                      | 1,260.00                                    |
|                                   |                     | TAL metals                     | soil          | X14/21/28                        | 250.00                             | 42           | 10,500                                      | 250.00   | 6                      | 1,500.00                                    |
|                                   |                     | TPH                            | soil          | X14/21/28                        | 125.00                             | 42           | 5,250                                       | 125.00   | 6                      | 750.00                                      |
|                                   |                     | pH                             | soil          | X14/21/28                        | 10.00                              | 42           | 420.00                                      | 10.00  | 83                     | 2.0 60.00                                   |
|                                   |                     | BTEX                           | water         | X14/21/28                        | 150.00                             | 30           | 4,500                                       | 150.00   | 4                      | 600.00                                      |
|                                   |                     | TPH                            | water         | X14/21/28                        | 125.00                             | 24           | 3,000                                       | 125.00   | 4                      | 500.00                                      |

- (1) INDICATE LAB REQUIREMENTS FOR SIMPLE VOLUMES, PRESERVATIVES, AND CONTAINER USE BRACKETS TO INDICATE OF VOLUMES ARE FOR THE SAME SAMPLE OR ARE REQUIRED FOR SPECIFIC PARAMETERS.  
 (2) ONLY APPLICABLE FOR SPECIAL QA REQUESTS - METHOD REQUIRED QA SHOULD BE INCLUDED I SAMPLE ANALYSIS COST.  
 (3) REFER TO PAGE 1 FOR SPECIFIC INFORMATION ON REQUESTED ANALYSES.

**ADDITIONAL COSTS:**

SURCHARGE FOR QA/QC DELIVERABLE PACKAGE (DEFINED ON PG 1 AND ATTACHMENT 1): (8%) 3548.80

DISPOSAL COST (SPECIFY IF PER CONTAINER OR FOR TOTAL JOB): (Total) 570.00

OTHER COST: \_\_\_\_\_

DISCOUNTS: \_\_\_\_\_

IS VERBAL PO# OK? (CIRCLE ONE): YES NO

IS LAB PICKUP INCLUDED? (CIRCLE ONE): YES NO

ARE SAMPLE CONTAINERS/PAPERWORK INCLUDED? (CIRCLE ONE): YES NO

**LAB CLASSIFICATION:**

SMALL BUSINESS (CIRCLE ONE):

YES NO

IF YES, ID#: \_\_\_\_\_

SMALL DISADVANTAGED BUSINESS (CIRCLE ONE):

YES NO

IF YES, ID#: \_\_\_\_\_

WOMAN-OWNED BUSINESS (CIRCLE ONE):

YES NO

IF YES, ID#: \_\_\_\_\_

MINORITY-OWNED BUSINESS (CIRCLE ONE):

YES NO

IF YES, ID#: \_\_\_\_\_

INDICATE PARISH/COUNTY AND STATE BUSINESS IS LOCATED IN: Travis, TX

**BID TOTAL:** 48,478.80

48,448.80

I HAVE READ AND AGREE TO ALL TERMS OF THIS BID REQUEST, ATTACHMENTS AND QUOTE.  
 PLEASE SIGN AND RETURN BOTH BID SPECIFICATION AND BID QUOTE SHEETS)

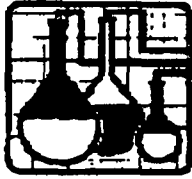
SIGNATURE OF LAB AGENT: \_\_\_\_\_

Sandra L. Green

LAB NAME: \_\_\_\_\_

Quanterra, Inc.

PAGE 2 of 2



SPECIALIZED ASSAYS, INC. • 2960 Foster Creighton Dr. • P.O. Box 40566 • Nashville, TN 37204-0566

615-726-0177 • 800-765-0980 • Fax 615-726-3404

## - Fax Cover Sheet -

**Date:** April 21, 1998      **From:** Jerry Burgess  
**Pages:** 4      **(800) 350-1694**  
**To:** David Anderson  
**Company:** Ecology & Environment  
**Fax Phone:** 214-855-1422

Hi David...

...sorry I didn't get these to you earlier today...what a day!!

Anyway, here is the quote you requested for 6S154.

David, thanks for thinking of us.

When I can help, please give me a call.

THANKS!

Jerry...

**ANALYTICAL REQUIREMENTS SUMMARY**

**PROJECT (CASE) NUMBER:** 6S154

**ANALYSIS REQUESTED:** BTEX, PAH, TAI, metals, TPH and pH in soil, BTEX and TPH in water. BTEX by 8021B, PAH by 8310, TAI, metals by 12/95 E&E SOW, TPH by TNRCC 1005, PH by 9045C.

**NUMBER OF SAMPLES BY MATRIX:** 42 soil, 30 water (6 water trip blank BTEX only)

**LAB QA REQUIREMENTS:**

**MS:** 3 for BTEX, PAH, TAI, metals, TPH in soil; 2 for BTEX and TPH in water.

**MSD:** 3 for BTEX, PAH and TPH in soil; 2 for BTEX and TPH in water

**DUP:** 3 for TAI metals and pH in soil.

**TOTAL NUMBER OF ANALYSES REQUESTED:** 48 BTEX, PAH, TAI, metals and TPH in soil, 45 pH in soil, 34 BTEX in water, 28 TPH in water.

**DELIVERABLE PACKAGE REQUIRED:** Full CLP like deliverable per attached SOWs.

**DELIVERY SCHEDULE:** 14 calendar day FAX, 21 calendar day hard copy.

**BEGINNING SHIP DATE:** 4/27/98

**END SHIP DATE:** 5/4/98

**PROJECT MANAGER:** Tom Beer

**PROCUREMENT CHEMIST:** David Anderson

**OTHER:** 10 of the 30 water samples are field blanks, 6 trip blanks, 1 field blank and 3 equipment blanks. Laboratory QA (MS/MSD) shall not be conducted on sample designated as blanks.

**PLEASE PROVIDE, VERIFY OR MODIFY THE UNIT AND TOTAL BID COSTS FOR THE ABOVE PROJECT AND RETURN SIGNED COPIES OF ALL PAGES TO THE E & E PROCUREMENT CHEMIST BY 12:00 NOON, 04/21/98.**

SPECIALIZED ASSAYS, INC  
LABORATORY

Jerry Bueger  
LABORATORY AGENT

4/21/98  
DATE

**E & E ANALYTICAL QUOTE REQUEST FORM  
BID SPECIFICATION - TO BE COMPLETED BY E & E**

FROM (E & E REQUESTOR): David Anderson TO (LAB CONTACT): Jerry Burgess/Gary Luffman  
 OFFICE NAME/ADDRESS: 1999 Bryan St. Ste. 2000 LAB NAME/ADDRESS: Specialized Assays  
Dallas, TX 75201 2960 Foster Creighton Dr. Nashville, TN 37204  
 PHONE #: (214) 220-0318 FAX #: (214) 855-1422 PHONE #: 800-755-0980 FAX #: 615-726-3404  
 SITE NAME: 6S154 FAX #: 052601SFG REQUEST DATE: 4/20/98 QUOTE DEADLINE: 12 noon 4/21/98  
 SHIPMENT INFORMATION:  
 DATE OF FIRST SHIPMENT: 4/27/98 FREQUENCY OF SHIPMENTS: daily # SAMPLES/SHIPMENT: 1 TOTAL # OF SAMPLES: 72

**REQUESTED ANALYSES/BROKEN DOWN BY MATRIX AND PARAMETER**

| SAME SAMPLE INDICATED BY BRACKETS | # OF SAMPLES | ANALYTICAL PARAMETERS | METHOD #   | SAMPLE MATRIX | #/TYPE OF EXTRA QA REQUESTS (MS/MSD, ETC.) | OTHER REQUIREMENTS |
|-----------------------------------|--------------|-----------------------|------------|---------------|--|--------------------|
|                                   | 42           | BTEX                  | 8021       | soil/sediment | 3 MS/MSD                                   | see attached SOW   |
|                                   | 42           | PAH                   | 8310       | soil/sediment | 3 MS/MSD                                   | see attached SOW   |
|                                   | 42           | TA, metals            | E&E SOW    | soil/sediment | 3 MS/DLP                                   | see E&E 12/95 SOW  |
|                                   | 42           | TPH                   | TNRCC 1005 | soil/sediment | 3 MS/DLP                                   | see method         |
|                                   | 42           | pH                    | 8045C      | soil/sediment | 3 DLP                                      |                    |
|                                   | 30           | BTEX                  | 8021       | water         | 2 MS/MSD                                   | see attached SOW   |
|                                   | 24           | TPH                   | TNRCC 1005 | water         | 2 MS/MSD                                   | see method         |

- 1) DATA CATEGORY (DEFINITIVE, SCREENING WITH DEFINITIVE CONFIRMATION OR SCREENING ONLY): DEFINITIVE  
 2) SAMPLE DISPOSAL BY LAB (YES, NO, OR OTHER): YES  
 3) TURNAROUND TIME FAX= 14 Calendar days HARDCOPY/ELECT= 21 calendar days IN CALENDAR OR WORK DAYS  
 4) REQUIRED QA/QC DELIVERABLE PACKAGE (FULL PACKAGE OR RESULTS ONLY): FULL REFER TO ATTACHED SOWs FOR A LIST OF SPECIFIC DOCUMENTS REQUIRED.  
 5) REQUIRED DATA QUALITY: ALL ANALYTICAL DATA MUST MEET CRITERIA DEFINED IN EPA OSWER DIRECTIVE 9350.4-01/9355.901 FOR THE SELECTED DATA CATEGORY AND ANALYTICAL PARAMETER. APPLICABLE EXCERPTS OF THESE DOCUMENTS WILL BE PROVIDED TO THE LAB BY REQUEST.  
 6) ADDITIONAL TERMS AND CONDITIONS APPLICABLE TO SUBCONTRACTOR ANALYTICAL SERVICES UNDER GOVERNMENT CONTRACTS: REFER TO ATTACHMENT 2.

SIGNATURE OF LAB AGENT: Jerry D. Burgess

PAGE 1 of 2

**E and E ANALYTICAL QUOTE REQUEST FORM**  
**BID QUOTE - TO BE COMPLETED BY LABORATORY (3)**

| SAME SAMPLE<br>INDICATED<br>BY BRACKETS | VOL/<br>PRES/<br>CONT<br>(1) | ANALYTICAL<br>PARAMETER/<br>METHOD<br># | SAMPLE<br>MATRIX | TURNAROUND<br>TIME<br>VERBAL/<br>HARDCOPY | UNIT COST<br>FOR<br>SPECIFIED<br>TURNAROUND | # OF<br>SAMPLES | TOTAL ANALYSIS<br>COST (UNIT COST<br>X # SAMPLES) | UNIT COST/TYPE OF<br>EXTRA QA REQUESTS<br>(MS/MSD, ETC.)<br>(2) | # OF<br>EXTRA QA<br>REQUESTS | TOTAL EXTRA<br>QA COST<br>(UNIT COST<br>X # REQUEST) |
|---|------------------------------|---|------------------|---|---|-----------------|---|---|------------------------------|--|
|   |                              | BTEX                                    | soil             | 14/21                                     | 38.25                                       | 42              | 1,606.50  | 38.25   | 6                            | 229.50   |
|   |                              | PAH                                     | soil             | 14/21                                     | 96.00                                       | 42              | 4,032.00  | 96.00   | 6                            | 576.00   |
|   |                              | TAL metals                              | soil             | 14/21                                     | 90.00                                       | 42              | 3,780.00  | 90.00   | 6                            | 540.00   |
|   |                              | TPH                                     | soil             | 14/21                                     | 50.00                                       | 42              | 2,100.00  | 50.00   | 6                            | 300.00   |
|   |                              | pH                                      | soil             | 14/21                                     | 6.00  | 42              | 252.00  | 6.00  | 3 6                          | 18.00 36.00  |
|   |                              | BTEX                                    | water            | 14/21                                     | 38.25                                       | 30              | 1,147.50  | 38.25   | 4                            | 153.00   |
|   |                              | TPH                                     | water            | 14/21                                     | 50.00                                       | 24              | 1,200.00  | 50.00   | 4                            | 200.00   |
|   |                              |   |                  |   |   |                 | -   | -   |                              | -  |

(1) INDICATE LAB REQUIREMENTS FOR SAMPLE VOLUMES, PRESERVATIVES, AND CONTAINER USE BRACKETS TO INDICATE OF VOLUMES ARE FOR THE SAME SAMPLE

OR ARE REQUIRED FOR SPECIFIC PARAMETERS.

(2) ONLY APPLICABLE FOR SPECIAL QA REQUESTS - METHOD REQUIRED QA SHOULD BE INCLUDED W/SAMPLE ANALYSIS COST.

(3) REFER TO PAGE 1 FOR SPECIFIC INFORMATION ON REQUESTED ANALYSES.

ADDITIONAL COSTS:

SURCHARGE FOR QA/QC DELIVERABLE PACKAGE (DEFINED ON PG 1 AND ATTACHMENT 1):

NONE

DISPOSAL COST (SPECIFY IF PER CONTAINER OR FOR TOTAL JOB):

NONE

OTHER COST:

DISCOUNTS:

APPLIED

IS VERBAL POW OK? YES

IS LAB PICKUP INCLUDED?

YES

ARE SAMPLE CONTAINERS/PAPERWORK INCLUDED?

YES

LAB CLASSIFICATION:

SMALL BUSINESS: NO

SMALL DISADVANTAGED BUSINESS: NO

WOMAN-OWNED BUSINESS: NO

MINORITY-OWNED BUSINESS: NO

INDICATE PARISH/COUNTY AND STATE BUSINESS IS LOCATED IN:

DAVIDSON, TN

BID TOTAL: 16,152.50

16,134.50

I HAVE READ AND AGREE TO ALL TERMS OF THIS BID REQUEST, ATTACHMENTS AND QUOTE.

PLEASE SIGN AND RETURN BOTH BID SPECIFICATION AND BID QUOTE SHEETS

SIGNATURE OF LAB AGENT:

*James D. Burgess*

LAB NAME:

SPECIALIZED ASSAYS, INC.

Final 4/13/98

## ANALYTICAL OBJECTIVES WORKSHEET

### I. PROJECT INFORMATION

- Site Name: WILCOX REFINERY CERCLIS ID: OKD001010917
- Site Location: Bristow OK Project TDD#: 06-98-03-0009
- START PM: Tom Beer Project PAN: 052601SFX
- EPA TM: Don Smith Request/Due Dates: \_\_\_\_\_
1. SOURCE OF FUNDING (Circle One): CERCLA, OPA, Other: \_\_\_\_\_
  2. INTEGRATED DATA USES (Circle All That Apply): SI, ESI, RI, Removal Assessment, EE/CA, Disposal, Enforcement, Other: \_\_\_\_\_
  3. TYPE OF LAB (Circle All That Apply): CLP RAS, START Subcontract (External or E & E ASC), EPA Region 6 Lab, ERT, Mobile Lab, Field Screening, NEIC, Other Fed, Other State, Other EPA Contractor [ERCS/ERRS], Other: \_\_\_\_\_
  4. DATA CATEGORY (Circle One): Screening, Definitive, Screening with Definitive Confirmation, Other: \_\_\_\_\_
  5. DATA VALIDATION REQUIREMENTS (Circle One): OSWER, CLP, Expanded CLP, None, Other: \_\_\_\_\_
  6. DATA PACKAGE REQUIRED (Circle One): Results Only, Full Package ("CLP-Like"), CLP Protocol and Package, Other: \_\_\_\_\_
  7. ANTICIPATED INITIAL SHIPMENT DATE: 4/27/98
  8. FREQUENCY/DATES OF SUBSEQUENT SHIPMENTS: every day - 6 days
  9. ESTIMATED NUMBER OF SAMPLES PER SHIPMENT: 9 (6 soil + 3 water) + QA
  10. TURNAROUND TIME - VERBAL/FAX (In Work or Calendar Days):  
14 Calendar days
  11. TURNAROUND TIME - HARD COPY/ELECT (In Work or Calendar Days):  
21 Calendar days
  12. SAMPLE DISPOSAL REQUIREMENTS (Circle One): Lab Provides, Return to Site, Other: \_\_\_\_\_
  13. TRANSPORT OF SAMPLES (Circle One): Lab Pick-up, Drop Off, Ship, Other: \_\_\_\_\_

Approval/EPA TM Signature: Donald P. Smith

DATE: 4-17-98

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## II. SAMPLE INFORMATION

Complete the following series of questions for each group of samples that varies by **MATRIX** or **REQUESTED ANALYTICAL PARAMETER(S)**. Use additional pages if needed.

SAMPLE GROUP NUMBER 1

### 1. NUMBER OF SAMPLES

- a. Number of field samples (including test and background samples) to be submitted: 36 (2 samples/boring, 18 borings, 3 borings/day) + 2 sediment
- b. Number and type of field QA samples (replicates, trip, field and rinsate blanks) to be submitted: 10% dupe (4), TB=1/cooler (6), EB=1/2d (3)
- c. Number and type of laboratory QA analyses required (i.e., MS/MSD pairs, spikes, duplicates, etc.): 1 ea. per SDG (2 pairs = 4)
- d. Total number of sample requests (field samples [1a] + field QA samples [1b] + lab QA requests [1c]): 36 + (4 + 6 + 3) + 4 = 55

### 2. MATRIX OF SAMPLES (circle one): air, water, soil waste (drum, tank, pit), wipe, other

### 3. SAMPLE COMPOSITION (indicate number of each): \_\_\_\_\_ grab; \_\_\_\_\_ composite (\_\_\_\_\_ aliquots)

### 4. SOIL SAMPLE DEPTH (indicate number of each): 18+2 sed. surface (0-6" depth) 18 subsurface (\_\_\_\_\_ depth); other \_\_\_\_\_

### 5. ANALYTICAL PARAMETERS

*visibly stained, elevated OVA sample, or TD (19'-20')*

Record all analytical parameters that will be requested for this group of samples. Parameters may include: specific compounds; groups of compounds (such as TAL metals, TCL VOAs, TCL BNAs, TCL pesticides/PCBs); RCRA characteristics; or miscellaneous tests (such as asbestos, BTU, COD, TSS).

| PARAMETER                           | BTEX              | PAHs         | Metals <sup>(23)</sup> | TPH               | pH/DH              |  |
|-------------------------------------|-------------------|--------------|------------------------|-------------------|--------------------|--|
| DESIRED METHOD(S)                   | GC<br>8021 B Mod. | HPLC<br>8310 | ICP<br>6010 B          | GC<br>8015 B Mod. | electro.<br>9045 C |  |
| MINIMUM DETECTION LIMIT             | 1 mg/kg           | 0.1 mg/kg    | 10 mg/kg               | 10 mg/kg          | —                  |  |
| EXPECTED CONC. LEVEL (LOW/MED/HIGH) | LOW               | LOW          | MED                    | MED               | MED                |  |

Approval/EPA TM Signature: Donald P. Smith DATE: \_\_\_\_\_

## II. SAMPLE INFORMATION

Complete the following series of questions for each group of samples that varies by **MATRIX** or **REQUESTED ANALYTICAL PARAMETER(S)**. Use additional pages if needed.

SAMPLE GROUP NUMBER 2

### 1. NUMBER OF SAMPLES

- a. Number of field samples (including test and background samples) to be submitted: 18 (1 boring, as practical) (see soils)
- b. Number and type of field QA samples (replicates, trip, field and rinsate blanks) to be submitted: 10% D (2) 1TB/VOA cooler (0), 1 FB, EB 1/24 (3)
- c. Number and type of laboratory QA analyses required (i.e., MS/MSD pairs, spikes, duplicates, etc.): 1 ea. SDG (1 pair) = 2
- d. Total number of sample requests (field samples [1a] + field QA samples [1b] + lab QA requests [1c]): 18 + 2 + 0 + 1 + 3 + 2 = 26

### 2. MATRIX OF SAMPLES (circle one): air, ground water, soil, waste (drum, tank, pit), wipe, other

### 3. SAMPLE COMPOSITION (indicate number of each): 18 grab: \_\_\_\_\_ composite (\_\_\_\_\_ aliquots)

### 4. SOIL SAMPLE DEPTH (indicate number of each): 18 surface (\_\_\_\_\_ depth) \_\_\_\_\_ subsurface (max. 25 depth); other \_\_\_\_\_

### 5. ANALYTICAL PARAMETERS

Record all analytical parameters that will be requested for this group of samples. Parameters may include: specific compounds; groups of compounds (such as TAL metals, TCL VOAs, TCL BNAs, TCL pesticides/PCBs); RCRA characteristics; or miscellaneous tests (such as asbestos, BTU, COD, TSS).

| PARAMETER                           | BTEX            | PAHs         | TCL <sup>(23)</sup> Metals | TPH              | pH [H <sup>+</sup> ] |  |
|-------------------------------------|-----------------|--------------|----------------------------|------------------|----------------------|--|
| DESIRED METHOD(S)                   | GC<br>8021B Mod | HPLC<br>8310 | ICP<br>6010B               | GC<br>TNRCC 1005 | Field                |  |
| MINIMUM DETECTION LIMIT             | 0.01 mg/L       | 0.01 mg/L    | 0.1 mg/L                   | 1 mg/L           | —                    |  |
| EXPECTED CONC. LEVEL (LOW/MED/HIGH) | Low             | Low          | Low                        | Low              | Low                  |  |

Approval/EPA TM Signature: Ronald P. Smith DATE: \_\_\_\_\_



**ANALYTICAL REQUIREMENTS SUMMARY**

**PROJECT (CASE) NUMBER:** 6S154

**ANALYSIS REQUESTED:** BTEX, PAH, TAL metals, TPH and pH in soil, BTEX and TPH in water. BTEX by 8021B, PAH by 8310, TAL metals by 12/95 E&E SOW, TPH by TNRCC 1005, PH by 9045C.

**NUMBER OF SAMPLES BY MATRIX:** 42 soil, 30 water (6 water trip blank BTEX only)

**LAB QA REQUIREMENTS:**

**MS:** 3 for BTEX, PAH, TAL metals, TPH in soil; 2 for BTEX and TPH in water.

**MSD:** 3 for BTEX, PAH and TPH in soil; 2 for BTEX and TPH in water.

**DUP:** 3 for TAL metals and pH in soil.

**TOTAL NUMBER OF ANALYSES REQUESTED:** 48 BTEX, PAH, TAL metals and TPH in soil, 45 pH in soil, 34 BTEX in water, 28 TPH in water.

**DELIVERABLE PACKAGE REQUIRED:** Full CLP like deliverable per attached SOWs.

**DELIVERY SCHEDULE:** 14 calendar day FAX, 21 calendar day hard copy.

**BEGINNING SHIP DATE:** 4/27/98

**END SHIP DATE:** 5/4/98

**PROJECT MANAGER:** Tom Beer

**PROCUREMENT CHEMIST:** David Anderson

**OTHER:** 10 of the 30 water samples are field blanks, 6 trip blanks, 1 field blank and 3 equipment blanks. Laboratory QA (MS/MSD) shall not be conducted on sample designated as blanks.

**PLEASE PROVIDE, VERIFY OR MODIFY THE UNIT AND TOTAL BID COSTS FOR THE ABOVE PROJECT AND RETURN SIGNED COPIES OF ALL PAGES TO THE E & E PROCUREMENT CHEMIST BY 12:00 NOON, 04/21/98.**

\_\_\_\_\_  
**LABORATORY**

\_\_\_\_\_  
**LABORATORY AGENT**

\_\_\_\_\_  
**DATE**

**E & E ANALYTICAL QUOTE REQUEST FORM  
BID SPECIFICATION - TO BE COMPLETED BY E & E**

|   |                              |  |              |
|---|------------------------------|--|--------------|
| FROM (E & E REQUESTOR): <u>David Anderson</u>                                   |                              | TO (LAB CONTACT): _____  |              |
| OFFICE NAME/ADDRESS: <u>1999 Bryan St. Ste. 2000</u><br><u>Dallas, TX 75201</u> |                              | LAB NAME/ADDRESS: _____  |              |
| PHONE #: <u>(214) 220-0318</u>  | FAX #: <u>(214) 855-1422</u> | PHONE #: _____   | FAX #: _____ |
| SITE NAME: <u>6S154</u>   | PAN #: <u>052601SFG1</u>     | REQUEST DATE: <u>4/20/98</u> QUOTE DEADLINE: <u>12 noon 4/21/98</u>                              |              |
| SHIPMENT INFORMATION:   |                              |  |              |
| DATE OF FIRST SHIPMENT: <u>4/27/98</u>  |                              | FREQUENCY OF SHIPMENTS: <u>daily</u> # SAMPLES/SHIPMENT: <u>11</u> TOTAL # OF SAMPLES: <u>72</u> |              |

**REQUESTED ANALYSES/BROKEN DOWN BY MATRIX AND PARAMETER**

| SAME SAMPLE INDICATED BY BRACKETS | # OF SAMPLES | ANALYTICAL PARAMETERS | METHOD #   | SAMPLE MATRIX | #/TYPE OF EXTRA QA REQUESTS (MS/MSD, ETC.) | OTHER REQUIREMENTS |
|-----------------------------------|--------------|-----------------------|------------|---------------|--|--------------------|
|                                   | 42           | BTEX                  | 8021       | soil/sediment | 3 MS/MSD                                   | see attached SOW   |
|                                   | 42           | PAH                   | 8310       | soil/sediment | 3 MS/MSD                                   | see attached SOW   |
|                                   | 42           | TAL metals            | E&E SOW    | soil/sediment | 3 MS/DUP                                   | see E&E 12/95 SOW  |
|                                   | 42           | TPH                   | TNRCC 1005 | soil/sediment | 3 MS/DUP                                   | see method         |
|                                   | 42           | pH                    | 9045C      | soil/sediment | 3 DUP                                      |                    |
|                                   | 30           | BTEX                  | 8021       | water         | 2 MS/MSD                                   | see attached SOW,  |
|                                   | 24           | TPH                   | TNRCC 1005 | water         | 2 MS/MSD                                   | see method         |

- 1) DATA CATEGORY (DEFINITIVE, SCREENING WITH DEFINITIVE CONFIRMATION OR SCREENING ONLY): DEFINITIVE
- 2) SAMPLE DISPOSAL BY LAB ( YES, NO, OR OTHER): YES
- 3) TURNAROUND TIME: FAX= 14 Calendar days HARDCOPY/ELECT= 21 calendar days [IN CALENDAR OR WORK DAYS]
- 4) REQUIRED QA/QC DELIVERABLE PACKAGE (FULL PACKAGE OR RESULTS ONLY): FULL REFER TO ATTACHED SOWs FOR A LIST OF SPECIFIC DOCUMENTS REQUIRED.
- 5) REQUIRED DATA QUALITY: ALL ANALYTICAL DATA MUST MEET CRITERIA DEFINED IN EPA OSWER DIRECTIVE 9360.4-01/9355.901 FOR THE SELECTED DATA CATEGORY AND ANALYTICAL PARAMETER. APPLICABLE EXCERPTS OF THESE DOCUMENTS WILL BE PROVIDED TO THE LAB BY REQUEST.
- 6) ADDITIONAL TERMS AND CONDITIONS APPLICABLE TO SUBCONTRACTOR ANALYTICAL SERVICES UNDER GOVERNMENT CONTRACTS: REFER TO ATTACHMENT 2.

SIGNATURE OF LAB AGENT: \_\_\_\_\_

**E & E ANALYTICAL QUOTE REQUEST FORM  
BID QUOTE - TO BE COMPLETED BY LABORATORY (3)**

| SAME SAMPLE INDICATED BY BRACKETS | VOL/ PRES/ CONT (1) | ANALYTICAL PARAMETER/ METHOD # | SAMPLE MATRIX | TURNAROUND TIME VERBAL/ HARDCOPY | UNIT COST FOR SPECIFIED TURNAROUND | # OF SAMPLES | TOTAL ANALYSIS COST (UNIT COST X # SAMPLES) | UNIT COST/TYPE OF EXTRA QA REQUESTS (MS/MSD, ETC.) (2) | # OF EXTRA QA REQUESTS | TOTAL EXTRA QA COST (UNIT COST X # REQUEST) |
|-----------------------------------|---------------------|--------------------------------|---------------|----------------------------------|------------------------------------|--------------|---|--|------------------------|---|
|                                   |                     | BTEX                           | soil          | 14/21                            |                                    | 42           |   |  | 6                      |   |
|                                   |                     | PAH                            | soil          | 14/21                            |                                    | 42           |   |  | 6                      |   |
|                                   |                     | TAL metals                     | soil          | 14/21                            |                                    | 42           |   |  | 6                      |   |
|                                   |                     | TPH                            | soil          | 14/21                            |                                    | 42           |   |  | 6                      |   |
|                                   |                     | pH                             | soil          | 14/21                            |                                    | 42           |   |  | 6                      |   |
|                                   |                     | BTEX                           | water         | 14/21                            |                                    | 30           |   |  | 4                      |   |
|                                   |                     | TPH                            | water         | 14/21                            |                                    | 24           |   |  | 4                      |   |

- (1) INDICATE LAB REQUIREMENTS FOR SIMPLE VOLUMES, PRESERVATIVES, AND CONTAINER USE BRACKETS TO INDICATE OF VOLUMES ARE FOR THE SAME SAMPLE OR ARE REQUIRED FOR SPECIFIC PARAMETERS.  
 (2) ONLY APPLICABLE FOR SPECIAL QA REQUESTS - METHOD REQUIRED QA SHOULD BE INCLUDED I SAMPLE ANALYSIS COST.  
 (3) REFER TO PAGE 1 FOR SPECIFIC INFORMATION ON REQUESTED ANALYSES.

**ADDITIONAL COSTS:**

SURCHARGE FOR QA/QC DELIVERABLE PACKAGE (DEFINED ON PG 1 AND ATTACHMENT 1): \_\_\_\_\_  
 DISPOSAL COST (SPECIFY IF PER CONTAINER OR FOR TOTAL JOB): \_\_\_\_\_  
 OTHER COST: \_\_\_\_\_ DISCOUNTS: \_\_\_\_\_  
 IS VERBAL PO# OK? (CIRCLE ONE): YES NO IS LAB PICKUP INCLUDED? (CIRCLE ONE): YES NO  
 ARE SAMPLE CONTAINERS/PAPERWORK INCLUDED? (CIRCLE ONE): YES NO

**LAB CLASSIFICATION:**

SMALL BUSINESS (CIRCLE ONE): YES NO IF YES, ID#: \_\_\_\_\_  
 SMALL DISADVANTAGED BUSINESS (CIRCLE ONE): YES NO IF YES, ID#: \_\_\_\_\_  
 WOMAN-OWNED BUSINESS (CIRCLE ONE): YES NO IF YES, ID#: \_\_\_\_\_  
 MINORITY-OWNED BUSINESS (CIRCLE ONE): YES NO IF YES, ID#: \_\_\_\_\_  
 INDICATE PARISH/COUNTY AND STATE BUSINESS IS LOCATED IN: \_\_\_\_\_

**BID TOTAL:** \_\_\_\_\_

I HAVE READ AND AGREE TO ALL TERMS OF THIS BID REQUEST, ATTACHMENTS AND QUOTE.  
 PLEASE SIGN AND RETURN BOTH BID SPECIFICATION AND BID QUOTE SHEETS)

SIGNATURE OF LAB AGENT: \_\_\_\_\_ LAB NAME: \_\_\_\_\_

**POLYNUCLEAR AROMATIC HYDROCARBONS (PAH) IN SOIL AND WATER  
BY HIGH PRESSURE LIQUID CHROMATOGRAPHY (HPLC)**

**1. Target Compound List (TCL)/Required Quantitation Limits (RQL).** Table 1 lists the TCL analytes and their RQLs. RQLs are based on the extraction of 1000 ml of water samples and 30 gram of soil samples with a final extract volume of 1 ml. The laboratory shall use CLP form 1B as guidance for reporting sample results.

**PAH ANALYSIS TARGET COMPOUND LIST  
AND REQUIRED QUANTITATION LIMITS**

| Analyte                    | CAS#     | Quantitation Limit |               |
|----------------------------|----------|--------------------|---------------|
|                            |          | Water<br>ug/L      | Soil<br>ug/Kg |
| 1. Naphthalene             | 91-20-3  | 18                 | 600           |
| 2. Acenaphthylene          | 208-96-8 | 23                 | 770           |
| 3. Acenaphthene            | 83-32-9  | 18                 | 600           |
| 4. Fluorene                | 86-83-7  | 2.1                | 70            |
| 5. Phenanthrene            | 85-01-8  | 6.4                | 210           |
| 6. Anthracene              | 120-12-7 | 6.6                | 220           |
| 7. Fluoranthene            | 206-44-0 | 2.1                | 70            |
| 8. Pyrene                  | 129-00-0 | 2.7                | 90            |
| 9. Benzo(a)anthracene      | 56-55-3  | 0.13               | 4.3           |
| 10. Chrysene               | 218-01-9 | 1.5                | 50            |
| 11. Benzo(b)fluoranthene   | 205-99-2 | 0.18               | 6             |
| 12. Benzo(k)fluoranthene   | 207-08-9 | 0.17               | 5.7           |
| 13. Benzo(a)pyrene         | 50-32-8  | 0.23               | 7.7           |
| 14. Dibenzo(a,h)anthracene | 53-70-3  | 0.30               | 10            |
| 15. Benzo(g,h,i)perylene   | 191-24-2 | 0.76               | 25            |
| 16. Indeno(1,2,3-cd)pyrene | 193-39-5 | 0.43               | 14            |
| 17. 1-Methylnaphthalene    | 90-12-0  | 20                 | 670*          |
| 18. 2-Methylnaphthalene    | 91-57-6  | 20                 | 670*          |

\*Additional analyte not listed in method.

**2. Analytical Method.** Water samples may be extracted using either method 3510 (Separatory Funnel Liquid-Liquid Extraction) or 3520 (Continuous Liquid-Liquid Extraction) from SW846. Soil samples may be extracted using either method 3540B (Soxhlet Extraction), 3541 (Automated Soxhlet Extraction) or 3550A (Ultrasonic Extraction). Cleanup using method 3630B (Silica Gel Cleanup) for all samples or 3640A (Gel-Permeation Cleanup) for soil samples is optional. If GPC cleanup is utilized, the final extract is to be concentrated to a final volume of 0.5 ml to maintain the required quantitation limits. Samples are to be analyzed using method 8310 (Polynuclear Aromatic Hydrocarbons) from SW846. Confirmation using a second column or changes in the elution solvent composition are not required.

**3. Quality Assurance/Quality Control.** The following QA criteria and QC procedures shall apply to all analyses conducted under this SOW and are the acceptance criteria for the data.

**Holding Times.** All samples are to be extracted within seven days of the date of collection shown on the Chain-of-Custody Record. The technical requirement for analysis of sample extracts is within 40 days of extraction. This technical requirement is superseded by the required reporting turnaround of 21 days after receipt of samples by the laboratory. All samples and sample extracts shall be maintained at 4°C.

**Initial Calibration.** Each HPLC column must undergo at a minimum an initial five point calibration for each target analyte. One of the calibration points must be at the RQL (50 ug/L), with the remaining standards defining the expected linear range of the analysis. Calibration standards with concentrations less than the RQL may be included but are not required. The laboratory shall calculate calibration factors (external standard method) or response factors (internal standard method) for each target analyte in each standard and the Relative Standard Deviation (%RSD) of the factor for each analyte. Report initial calibration results using CLP forms 6A or 6E as guidance. Acceptance criteria are that the %RSD for each analyte be less than or equal to 20%. The laboratory shall also determine and report retention times and average retention times for each target analyte and the retention time window used by the laboratory for identification. The retention time window shall be plus or minus three standard deviations of the calibration standards retention times, but should not exceed 2% of the average retention time. The laboratory should use CLP form 6D as guidance in reporting retention time data. The initial calibration shall remain in effect as long as calibration check samples meet the requirements listed below.

**Continuing Calibration Check.** The performance of the HPLC column must be checked by the analysis of a calibration check standard daily, or every 12 hours, whichever is more frequent. Each analytical sequence, after the initial calibration, must begin and end with the analysis of the calibration check standard. The calibration check standard concentrations shall be at the mid-range of the calibration curve. The laboratory shall calculate the percent difference (%D) between the actual and calculated concentration in the check standard for each

analyte, using CLP form 7E as guidance for reporting. Acceptance criteria are that the retention time is within the retention time window and that the %D is less than or equal to 15%.

**Method Blanks.** Method blanks shall be prepared by the laboratory whenever samples from the case/delivery group are prepared, at a minimum frequency of one blank for every 20 samples. Method blanks are to be prepared and analyzed for each matrix and concentration combination in the delivery group. The laboratory shall identify the samples associated with each method blank using CLP form 4A as guidance. Results of the method blanks shall be reported in the same format as the samples, using CLP form 1 as guidance. Acceptance criteria shall be that no target analyte be detected at a concentration greater than its RQL or the lowest concentration calibration standard, whichever is less.

**Surrogates.** Each sample shall be spiked with decachlorobiphenyl as a surrogate. The laboratory shall determine the % recovery of the surrogate, reporting the results using CLP form 2C as guidance. Acceptance criteria shall be 50-150% recovery, or the current statistical (3 sigma) limits at the laboratory. The laboratory must provide their statistical limits if they are to be used.

**Matrix Spike/Matrix Spike Duplicate.** The laboratory shall prepare and analyze one MS/MSD pair for each 20 samples of a particular matrix and concentration combination received, or for each delivery group, whichever is more frequent. The spiking solution shall contain each of the target analytes and the amount of spike added should result in a sample concentration equal to 2 to 3 times the RQL. The laboratory shall calculate the percent recovery of each analyte and the %RPD between the recoveries in the MS and MSD. The laboratory should use CLP form 3C as guidance for reporting. Acceptance criteria shall be 50-150% recoveries and 20% RPD for water, 35% RPD for soil, or the current statistical (3 sigma) limits at the laboratory. The laboratory must provide their statistical limits if they are to be used.

**Identification and Quantitation.** Confirmation using a second column or a modification in the elutant composition are not required. The laboratory must provide an example showing how the concentration on the form 1 is calculated from the raw instrument result.

**Qualifier Flags.** The laboratory shall use the following flags as qualifiers on the form 1.

U - Indicates that the analyte was analyzed for but was not detected. The sample quantitation limit reported must be corrected for dilutions, sample size and percent solids.

B - The analyte was detected in the associated blank as well as in the sample.

E - The concentration of the analyte in this sample analysis exceeds the calibration range established in the initial calibration.

D - Identifies an analyte identified in an analysis at a secondary dilution factor. This flag will correspond to a re-analysis of a sample where an "E" flag is present.

J - The concentration of the analyte in this sample analysis is less than the calibration range established in the initial calibration, i.e. the concentration is less than the lowest concentration standard used.

**AROMATIC VOLATILE ORGANIC (BTEX) ANALYSIS IN WATER/SOIL BY GAS  
CHROMATOGRAPHY (5030A/ 8021B)**

**1. Target Compound List (TCL)/Required Quantitation Limits (RQL).** Table 1 lists the TCL analytes and their RQLs. RQLs are based on the analysis of 5 milliliters or 5 grams of sample. Sample results are to be reported using CLP Form 1A for volatile organics as guidance. Heated purge-and-trap is recommended for soils.

**TABLE 1  
VOLATILE AROMATIC ANALYSIS TARGET COMPOUND LIST  
AND REQUIRED QUANTITATION LIMITS**

| Analyte            | CAS#      | Quantitation Limit |               |
|--------------------|-----------|--------------------|---------------|
|                    |           | Water<br>ug/L      | Soil<br>ug/kg |
| 1. Benzene         | 71-43-2   | 2                  | 2             |
| 2. Toluene         | 108-88-3  | 2                  | 2             |
| 3. Ethyl benzene   | 100-41-4  | 2                  | 2             |
| 4. Xylenes (total) | 1330-20-7 | 2                  | 2             |

**2. Analytical Methods.** Samples shall be introduced into the analytical system using method 5030A (Purge-and-Trap) from SW846. Analysis may be conducted using either method 8020A (Aromatic Volatile Organics by Gas Chromatography) or 8021A (Halogenated Volatiles by Gas Chromatography Using Photoionization and Electrolytic Conductivity Detectors in Series: Capillary Column Technique) from SW846, using the photoionization detector. Second column confirmation of target analytes identified is not required.

**3. Quality Assurance/Quality Control.** The following QA/QC criteria shall apply to all analyses conducted under this SOW and are the acceptance criteria for the data.

**Holding Times.** Unpreserved water samples should be analyzed within seven days of the date of collection shown on the Chain-of-Custody Record. Preserved water samples and soil samples should be analyzed within fourteen days of the date of collection shown on the Chain-of-Custody Record. All samples are to be maintained at 4°C.

**Initial Calibration.** Each GC column must undergo at a minimum an initial five point calibration for each of the target analytes. One of the calibration points must be at the RQL (2 ug/L) with the remaining standards defining the expected linear range of the analysis. Calibra-



tion standards with concentrations less than the RQL may be included but are not required. The laboratory shall calculate calibration factors or response factors for each target analyte in each standard and the Relative Standard Deviation (%RSD) of the factor for each analyte. Initial calibration results shall be reported using CLP forms 6A or 6E as guidance. Acceptance criteria are that the %RSD for each analyte be less than or equal to 20%. The laboratory shall also determine and report retention times and average retention times for each target analyte and the retention time window used by the laboratory for identification. The retention time windows shall be plus or minus three standard deviations of the calibration standards retention times, but should not exceed 2% of the average retention time. Retention time data should be reported using CLP form 6D as guidance. The initial calibration shall remain in effect as long as calibration check samples meet the requirements listed below.

**Continuing Calibration Check.** The performance of each GC column must be checked by the analysis of a calibration check standard daily, or every 12 hours, whichever is more frequent. Each analytical sequence, after the initial calibration, must begin and end with the analysis of the calibration check standard. The calibration check standard concentration shall be at the mid-range of the calibration curve. The laboratory shall calculate the percent difference (%D) between the actual and calculated concentration in check standard for each analyte, using CLP form 7E as guidance for reporting. Acceptance criteria are that the retention time is within the retention time window and that the %D is less than or equal to 15%.

**Method Blanks.** Method blanks shall be analyzed by the contractor whenever samples from the case/delivery group are analyzed, at a minimum frequency of every 20 analyses. Method blanks are to be analyzed for each matrix and concentration combination in the delivery group. The laboratory shall identify samples associated with each method blank using CLP form 4A as guidance. Results of the method blank shall be reported using CLP form 1A as guidance. Acceptance criteria shall be that no target analyte be detected at a concentration greater than its RQL.

**Surrogates.** The surrogate 1,1,1-trifluorotoluene shall be added to each sample, blank, matrix spike and matrix spike duplicate prior to analysis. The surrogate should be added so as to result in a sample concentration between 5 and 10 ug/L, and must be the same for all analyses. The laboratory shall calculate the percent recovery of the surrogate, using CLP form 2A as guidance for reporting. Acceptance criteria shall be 65-130% recovery for water samples and 50-150% recovery for soil samples, or the current statistical (3 sigma) limits at the laboratory. The laboratory must provide their statistical limits if they are to be used.

**Matrix Spike/Matrix Spike Duplicate.** The laboratory shall prepare and analyze one MS/MSD pair for each 20 samples of a particular matrix and concentration combination received, or for each delivery group, whichever is more frequent. The spiking solution shall contain each of the target analytes. Sufficient spike should be added to the sample before

analysis such that the sample concentration added shall be between 5 and 10 ug/L. The laboratory shall calculate the percent recovery of each analyte and the %RPD between the recoveries in the MS and MSD. The laboratory should use CLP form 3A as guidance for reporting. Acceptance criteria shall be 50-130% recovery and 20% RPD for water samples and 30-130% recovery and 35% RPD for soil samples, or the current statistical (3 sigma) limits at the laboratory. The laboratory must provide their statistical limits if they are to be used.

**Identification and Quantitation.** Second column confirmation of all target analytes is not required. The laboratory must provide an example showing how the concentration on the form 1 is calculated from the raw instrument result.

**Qualifier Flags.** The laboratory shall use the following flags as qualifiers on the form 1.

U - Indicates that the analyte was analyzed for but was not detected. The sample quantitation limit reported must be corrected for dilutions, sample size and percent solids.

B - The analyte was detected in the associated blank as well as in the sample.

E - The concentration of the analyte in this sample analysis exceeds the calibration range established in the initial calibration.

D - Identifies an analyte identified in an analysis at a secondary dilution factor. This flag will correspond to a re-analysis of a sample where an "E" flag is present.

J - The concentration of the analyte in this sample analysis is less than the calibration range established in the initial calibration, i.e. the concentration is less than the lowest concentration standard used.

# ecology and environment, inc.

1999 Bryan St., Suite 2000  
Dallas, TX 75201  
(214) 220-0318

International Specialists in the Environment  
FAX: (214) 855-1422

## FAX TRANSMISSION FORM

Date: April 20, 1998

Time:

Job Charge: KJ6103/052601SFXX

Total pages: 05  
(including transmission form)

To: Sandra Green

Company: Quanterra

Fax phone: 512-892-6652

From: David Anderson

IF THIS FAX IS INCOMPLETELY RECEIVED OR IS ILLEGIBLE, PLEASE CALL FOR RETRANSMISSION.

**E & E ANALYTICAL QUOTE REQUEST FORM  
BID SPECIFICATION - TO BE COMPLETED BY E & E**

|  |  |   |  |
|--|--|---|--|
| FROM (E & E REQUESTOR): <u>David Anderson</u>  |  | TO (LAB CONTACT): <u>Sandra Green</u>   |  |
| OFFICE NAME/ADDRESS: 1999 Bryan St. Ste. 2000<br><u>Dallas, TX 75201</u>   |  | LAB NAME/ADDRESS: <u>Quanterra</u><br><u>5307 Industrial Oaks Blvd. # 160, Austin, TX 78535</u> |  |
| PHONE #: <u>(214) 220-0318</u> FAX #: <u>(214) 855-1422</u>  |  | PHONE #: <u>512-892-6684</u> FAX #: <u>512-892-6652</u>   |  |
| SITE NAME: <u>6S154</u> PAN #: <u>052601SFG1</u>   |  | REQUEST DATE: <u>4/20/98</u> QUOTE DEADLINE: <u>12 noon 4/21/98</u>                             |  |
| SHIPMENT INFORMATION:<br>DATE OF FIRST SHIPMENT: <u>4/27/98</u> FREQUENCY OF SHIPMENTS: <u>daily</u> # SAMPLES/SHIPMENT: <u>11</u> TOTAL # OF SAMPLES: <u>72</u> |  |   |  |

**REQUESTED ANALYSES/BROKEN DOWN BY MATRIX AND PARAMETER**

| SAME SAMPLE INDICATED BY BRACKETS | # OF SAMPLES | ANALYTICAL PARAMETERS | METHOD #   | SAMPLE MATRIX | #/TYPE OF EXTRA QA REQUESTS (MS/MSD, ETC.) | OTHER REQUIREMENTS |
|-----------------------------------|--------------|-----------------------|------------|---------------|--|--------------------|
|                                   | 42           | BTEX                  | 8021       | soil/sediment | 3 MS/MSD                                   | see attached SOW   |
|                                   | 42           | PAH                   | 8310       | soil/sediment | 3 MS/MSD                                   | see attached SOW   |
|                                   | 42           | TAL metals            | E&E SOW    | soil/sediment | 3 MS/DUP                                   | see E&E 12/95 SOW  |
|                                   | 42           | TPH                   | TNRCC 1005 | soil/sediment | 3 MS/DUP                                   | see method         |
|                                   | 42           | pH                    | 9045C      | soil/sediment | 3 DUP                                      |                    |
|                                   | 30           | BTEX                  | 8021       | water         | 2 MS/MSD                                   | see attached SOW,  |
|                                   | 24           | TPH                   | TNRCC 1005 | water         | 2 MS/MSD                                   | see method         |

- 1) DATA CATEGORY (DEFINITIVE, SCREENING WITH DEFINITIVE CONFIRMATION OR SCREENING ONLY): DEFINITIVE
- 2) SAMPLE DISPOSAL BY LAB ( YES, NO, OR OTHER): YES
- 3) TURNAROUND TIME: FAX= 14 Calendar days HARDCOPY/ELECT= 21 calendar days [IN CALENDAR OR WORK DAYS]
- 4) REQUIRED QA/QC DELIVERABLE PACKAGE (FULL PACKAGE OR RESULTS ONLY): FULL REFER TO ATTACHED SOWs FOR A LIST OF SPECIFIC DOCUMENTS REQUIRED.
- 5) REQUIRED DATA QUALITY: ALL ANALYTICAL DATA MUST MEET CRITERIA DEFINED IN EPA OSWER DIRECTIVE 9360.4-01/9355.901 FOR THE SELECTED DATA CATEGORY AND ANALYTICAL PARAMETER. APPLICABLE EXCERPTS OF THESE DOCUMENTS WILL BE PROVIDED TO THE LAB BY REQUEST.
- 6) ADDITIONAL TERMS AND CONDITIONS APPLICABLE TO SUBCONTRACTOR ANALYTICAL SERVICES UNDER GOVERNMENT CONTRACTS: REFER TO ATTACHMENT 2.

SIGNATURE OF LAB AGENT: \_\_\_\_\_

# ecology and environment, inc.

1999 Bryan St., Suite 2000  
Dallas, TX 75201  
(214) 220-0318

International Specialists in the Environment  
FAX: (214) 855-1422

## FAX TRANSMISSION FORM

Date: April 20, 1998

Time:

Job Charge: KJ6103/052601SFXX

Total pages: *# 11*  
(including transmission form)

To: Caryn Wojtowicz

Company: ASC

Fax phone: 716-685-0852

From: David Anderson

IF THIS FAX IS INCOMPLETELY RECEIVED OR IS ILLEGIBLE, PLEASE CALL FOR RETRANSMISSION.

**E & E ANALYTICAL QUOTE REQUEST FORM**  
**BID SPECIFICATION - TO BE COMPLETED BY E & E**

|   |   |
|---|---|
| FROM (E & E REQUESTOR): <u>David Anderson</u>   | TO (LAB CONTACT): <u>Caryn Wojtowicz</u>  |
| OFFICE NAME/ADDRESS: <u>1999 Bryan St. Ste. 2000</u><br><u>Dallas, TX 75201</u>   | LAB NAME/ADDRESS: <u>E&amp;E ASC</u><br><u>4493 Walden Ave, Lancaster, NY 14086</u> |
| PHONE #: <u>(214) 220-0318</u> FAX #: <u>(214) 855-1422</u>   | PHONE #: <u>716-685-8080</u> FAX #: <u>716-685-0852</u>                             |
| SITE NAME: <u>6S154</u> PAN #: <u>052601SFG1</u>  | REQUEST DATE: <u>4/20/98</u> QUOTE DEADLINE: <u>12 noon 4/21/98</u>                 |
| SHIPMENT INFORMATION:   |   |
| DATE OF FIRST SHIPMENT: <u>4/27/98</u> FREQUENCY OF SHIPMENTS: <u>daily</u> # SAMPLES/SHIPMENT: <u>11</u> TOTAL # OF SAMPLES: <u>72</u> |   |

### REQUESTED ANALYSES/BROKEN DOWN BY MATRIX AND PARAMETER

| SAME SAMPLE INDICATED BY BRACKETS | # OF SAMPLES | ANALYTICAL PARAMETERS | METHOD #   | SAMPLE MATRIX | #/TYPE OF EXTRA QA REQUESTS (MS/MSD, ETC.) | OTHER REQUIREMENTS |
|-----------------------------------|--------------|-----------------------|------------|---------------|--|--------------------|
|                                   | 42           | BTEX                  | 8021       | soil/sediment | 3 MS/MSD                                   | see attached SOW   |
|                                   | 42           | PAH                   | 8310       | soil/sediment | 3 MS/MSD                                   | see attached SOW   |
|                                   | 42           | TAL metals            | E&E SOW    | soil/sediment | 3 MS/DUP                                   | see E&E 12/95 SOW  |
|                                   | 42           | TPH                   | TNRCC 1005 | soil/sediment | 3 MS/DUP                                   | see method         |
|                                   | 42           | pH                    | 9045C      | soil/sediment | 3 DUP                                      |                    |
|                                   | 30           | BTEX                  | 8021       | water         | 2 MS/MSD                                   | see attached SOW,  |
|                                   | 24           | TPH                   | TNRCC 1005 | water         | 2 MS/MSD                                   | see method         |

- 1) DATA CATEGORY (DEFINITIVE, SCREENING WITH DEFINITIVE CONFIRMATION OR SCREENING ONLY): DEFINITIVE
- 2) SAMPLE DISPOSAL BY LAB ( YES, NO, OR OTHER): YES
- 3) TURNAROUND TIME: FAX=14 Calendar days HARDCOPY/ELECT=21 calendar days [IN CALENDAR OR WORK DAYS]
- 4) REQUIRED QA/QC DELIVERABLE PACKAGE (FULL PACKAGE OR RESULTS ONLY): FULL REFER TO ATTACHED SOWs FOR A LIST OF SPECIFIC DOCUMENTS REQUIRED.
- 5) REQUIRED DATA QUALITY: ALL ANALYTICAL DATA MUST MEET CRITERIA DEFINED IN EPA OSWER DIRECTIVE 9360.4-01/9355.901 FOR THE SELECTED DATA CATEGORY AND ANALYTICAL PARAMETER. APPLICABLE EXCERPTS OF THESE DOCUMENTS WILL BE PROVIDED TO THE LAB BY REQUEST.
- 6) ADDITIONAL TERMS AND CONDITIONS APPLICABLE TO SUBCONTRACTOR ANALYTICAL SERVICES UNDER GOVERNMENT CONTRACTS: REFER TO ATTACHMENT 2.

SIGNATURE OF LAB AGENT: \_\_\_\_\_

## ecology and environment, inc.

1999 Bryan St., Suite 2000  
Dallas, TX 75201  
(214) 220-0318

International Specialists in the Environment  
FAX: (214) 855-1422

### FAX TRANSMISSION FORM

Date: April 20, 1998

Time:

Job Charge: KJ6103/052601SFXX

Total pages: *1011*  
(including transmission form)

To: Jerry Burgess/Gary Luffman

Company: Specialized Assays

Fax phone: 615-726-~~0477~~ *3404*

From: David Anderson

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|--|------------------------------|--|----------------------------|
| FROM (E & E REQUESTOR): <u>David Anderson</u>        |                              | TO (LAB CONTACT): <u>Jerry Burgess/Gary Luffman</u>  |                            |
| OFFICE NAME/ADDRESS: <u>1999 Bryan St. Ste. 2000</u> |                              | LAB NAME/ADDRESS: <u>Specialized Assays</u>  |                            |
| <u>Dallas, TX 75201</u>                              |                              | <u>2960 Foster Creighton Dr., Nashville, TN 37204</u>  |                            |
| PHONE #: <u>(214) 220-0318</u>                       | FAX #: <u>(214) 855-1422</u> | PHONE #: <u>800-755-0980</u>   | FAX #: <u>615-726-3404</u> |
| SITE NAME: <u>6S154</u>                              |                              | REQUEST DATE: <u>4/20/98</u> QUOTE DEADLINE: <u>12 noon 4/21/98</u>                              |                            |
| PAN #: <u>052601SFG1</u>                             |                              |  |                            |
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1999 Bryan St., Suite 2000  
Dallas, TX 75201  
(214) 220-0318

International Specialists in the Environment  
FAX: (214) 855-1422

## FAX TRANSMISSION FORM

Date: April 20, 1998

Time:

Job Charge: KJ6103/052601SFXX

Total pages:  
(including transmission form)

h

To: Sally Roan

Company: Core Laboratories

Fax phone: 713-690-5646 785-2827

From: David Anderson

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**E & E ANALYTICAL QUOTE REQUEST FORM  
 BID SPECIFICATION - TO BE COMPLETED BY E & E**

|  |  |  |  |
|--|--|--|--|
| FROM (E & E REQUESTOR): <u>David Anderson</u>  |  | TO (LAB CONTACT): <u>Sally Roan</u>  |  |
| OFFICE NAME/ADDRESS: 1999 Bryan St. Ste. 2000<br><u>Dallas, TX 75201</u>   |  | LAB NAME/ADDRESS: <u>Core Laboratories</u><br><u>6310 Rothway, Houston, TX 77040</u> |  |
| PHONE #: <u>(214) 220-0318</u> FAX #: <u>(214) 855-1422</u>  |  | PHONE #: <u>713-690-4444</u> FAX #: <u>713-690-5646</u>                              |  |
| SITE NAME: <u>6S154</u> PAN #: <u>052601SFG1</u>   |  | REQUEST DATE: <u>4/20/98</u> QUOTE DEADLINE: <u>12 noon 4/21/98</u>                  |  |
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